TEXT-BOOK OF MUSICAL ELEMENTS

GEO OAKEY

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BY

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FIFTH EDITION.

London:

J. CURWEN & SONS, 8 & 9 WARWICK LANE, E.C.

In Cloth, 1*s.* 6*d.*; *Paper*, 1*s.*

LONDON
J. CURWEN & SONS, MUSIC PRINTERS,
PLAISTOW, E.

PREFACE.

THE information given in this book should be in the possession of all practical musicians; it is a pre-requisite to higher studies in musical art, and is essential to a just and intelligent rendering of music, be the performer vocalist or instrumentalist.

The lack of theoretical knowledge which is exhibited by so many amateur performers in their inability to explain or to write correctly the simplest musical passage is now recognised by the various musical institutions and other examining bodies. Theoretical knowledge forms the chief subject of all preliminary examinations, and is a requirement in most examinations that are ostensibly confined to testing practical skill. To assist persons preparing for these examinations is one of the objects that the author has had in view in writing the following pages, and it is hoped that the questions and exercises which follow the text of the work will be specially useful for that purpose.

The present work differs from others of the same class principally in its plan and arrangement. The several topics are in the progressive order that the author considers best adapted to convey an entire knowledge of the subject to an ordinary student. The chief elements and the fundamental structure of notation are dealt with first, the minutiæ of ornament, variation, and contraction

being reserved for after and separate consideration in chapters specially devoted to them. Prominence is given to all the details of notation as it is written to-day rather than to those ancient methods of writing music which are often referred to in similar works. Such references have more place in a history of music, and are rarely, in the author's experience, a help to those who are endeavouring to master the elements of music. The various details of notation diffused throughout the work, with those which have special mention in the chapter embracing points of writing, will, it is hoped, help those who wish to write accurately and clearly. The chapter on the elements of harmony introduces a subject not generally included in a work of this class. The best teachers of the pianoforte find it advantageous that their pupils should not only possess a thorough knowledge of what is usually comprehended in the term "musical elements," but that they should also have some knowledge of the rudiments of the art that deals with the construction of music. The hope of the author is that the concluding chapter will not only meet the wants of those who seek to acquire a purely rudimentary knowledge of the art, but that it may stimulate some to make a more comprehensive study of the subject of harmony in its entirety.

UPTON, E.

September 16*th*, 1886.

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TEXT BOOK OF MUSICAL ELEMENTS

CHAPTER I.

PRELIMINARY DEFINITIONS.

1. MUSIC is produced by the combination of sound and rhythm.

2. SOUND is the result to the ear of vibrations of the air.

3. RHYTHM describes a series of percussions in more or less regular order.

4. MUSICAL SOUND is the result of vibrations of the air that are regular or periodic in order, and sufficiently rapid to produce continuity of effect.

5. PITCH is the term used to express the difference between musical sounds that result from the variation of the number of vibrations of the air in a given time. The greater the number of vibrations the higher the sound; the lesser the number the lower the sound.

6. INTENSITY is a term applied to sounds in referring to the difference in the force or strength of them. The difference depends on the extent of the vibrations of the air; the larger and more extended the vibrations the louder will be the sound.

7. DURATION in relation to sound is the time that the vibrations of the air continue at the rate that causes the sound.

8. TIME chiefly comprehends the variety in the duration of sounds as compared with one another.

9. TUNE chiefly comprehends the variety in the pitch of sounds as compared with one another.

CHAPTER II.

TUNE.

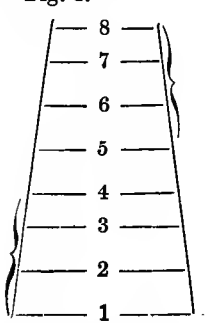
10. The definition of Tune in the previous paragraph is of Tune in the abstract as distinguished from Time in the abstract. Tune in the concrete not only includes Time, but other elements which it is necessary to consider separately.

11. Different sounds may be grouped together in a satisfactory manner in two ways. The sounds may be grouped for production successively, in which case the result is MELODY; or they may be grouped for production simultaneously, in which case the result is HARMONY.

12. Melody alone or melody and harmony combined may be comprehended in the word Tune. But Tune in either sense is dependent upon a certain relation of the sounds to one of them that is regarded as the basis of the others.

13. From a given sound a succession of seven others in more or less regular order combine to form what is termed a SCALE, from *scala*, a ladder. See Fig. 1.

Fig. 1.



14. The sounds numbered 1 to 7 are those which from their being quite distinct and different from each other form the series of the scale proper. But the eighth sound gives completeness, and this series of eight sounds is called a COMPLETE SCALE. The highest sound of the complete scale is at once the eighth or octave of it and the first of another scale that might be raised above it. Conversely the lowest sound of a scale is at once the first of it and the eighth or octave of the scale immediately below.

15. The several sounds that make up the scale, it will be perceived by Fig. 1, are not all at equal distances from each other. Those which have the greater distances between them are said to be a TONE apart, as from 1 to 2. Those which have the smaller distances between them are said to be a SEMITONE apart, as from 3 to 4.

16. Of the semitones in the scale there are but two; it is chiefly composed of Tones. Hence the term DIATONIC SCALE (from the Greek words signifying "through" and "tone") is applied to distinguish it from another which will in due course be mentioned.

17. There is more than one form of the Diatonic Scale. But that in which the order of tones and semitones succeed as in Fig. 1, viz., with the semitones between the third and fourth and seventh and eighth sounds, is termed the MAJOR SCALE.

18. The Major Scale is also said to be made up of two similar groups of four sounds. Each group includes two tones and a semitone, the semitone in each being at the top. See Fig. 1. These groups of four sounds are called TETRACHORDS. The Tetrachords in the Major Scale are themselves separated by a tone.

19. The sound upon which the scale is built and which governs all the rest is called the key-tone or TONIC. Each of the other sounds of the scale have names that are more or less characteristic of their importance. The fifth sound, which is the sound upon which the second tetrachord is built, is called the DOMINANT. The third sound, lying midway between these two, is called the MEDIANT. The fourth sound holds a similar position below the upper tone that the Dominant does to the lower Tonic, and is called the SUBDOMINANT. The sixth sound, lying midway between the upper Tonic and the Subdominant, is called the SUBMEDIANT. The second sound, from being the tone immediately above the Tonic is called the SUPERTONIC. The seventh sound, from its similar position below the Tonic, is called by some the SUBTONIC, and by others the SUBSEMITONE, but it is more generally known as the LEADING NOTE, from its tendency to lead to the Tonic. The sixth of the scale holds also a similar relation to the Dominant that the second does to the Tonic, and is sometimes called the SUPERDOMINANT.

8th Tonic.
7th Leading Note.
6th Submediant.
5th Dominant.
4th Subdominant.
3rd Mediant.
2nd Supertonic.
1st Tonic.

The table at the side gives in order the names that are in general use.

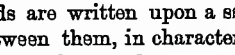
CHAPTER III.

NOTATION OF TUNE.

20. Musical sounds are written upon a series of parallel lines and in the spaces between them, in characters that vary in shape according to the length of the sounds.

21. A group of five lines is the number now in use, and such a group is called a STAVE or STAFF.

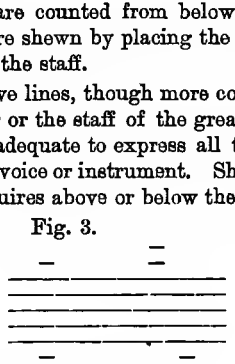
Fig. 2.



The lines and spaces are counted from below, as shewn. Relative differences of pitch are shewn by placing the characters referred to higher or lower upon the staff.

22. The staff of five lines, though more convenient than either the staff of the lesser or the staff of the greater number that was formerly in use, is inadequate to express all the sounds within the range of an ordinary voice or instrument. Short lines are therefore added as occasion requires above or below the staff.

Fig. 3.



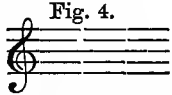
These short lines are called LEGER LINES.

23. Two staves in particular are in general use, upon which by the aid of leger lines it is possible to express all the sounds within the range of the human voice, or all those within the ordinary range of instruments.

24. To distinguish one staff from another a character is placed at the beginning called, from the word key, a CLEF.

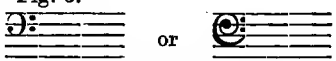
25. The clef that is used for the staff that represents the higher series of sounds is written thus

Fig. 4.



and the clef that is used for the staff that represents the lower series of sounds is written thus

Fig. 5.



26. The first-named or higher clef is called the Treble clef, and the staff upon which it is placed receives the name of the Treble staff. The second-named or lower clef is called the Bass clef, and the staff upon which it is placed receives the name of the Bass staff.

27. The clefs, besides distinguishing the staff, serve also to fix the pitch name of one of the sounds on the staff, and to give the clue to the rest of the sounds.

28. The differences of sounds as to their pitch, apart from any question of scalewise order, are called after the first seven letters of the alphabet, the letters A B C D E F G being used for seven successive sounds in ascending order and the names being repeated for each successive series.

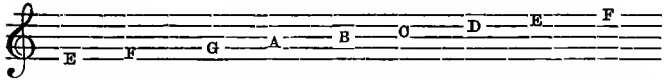
29. The treble clef is said to stand upon the second line of the staff (its curves cross that line more often than any other), and the clef itself is a corruption of the letter G. Hence the treble clef is called the G clef, and gives the pitch-name of G to the second line of its staff.

30. The bass clef stands upon the fourth line of its staff, and the clef itself in the first form of it given in Fig. 5 is a corruption of the letter F. Hence the bass clef is called the F clef, and gives the pitch-name of F to the fourth line of its staff.

31. Adjacent sounds are placed upon a line and in its next space above or below, or *vice versa*, in a space and upon its next line above or below. The next higher sound to that which is represented by the G clef would stand in the second space, which, as the first of another alphabetical series, would be called A. The next lower sound to that represented by the G clef would stand in the first space, which, as the next of the alphabetical series back-

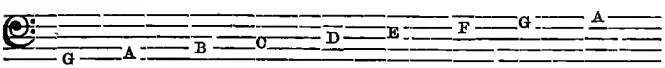
wards would be called F. Proceeding with the sounds each way from the clef sound it will be seen that the sounds of the lines and spaces of the treble staff will be these

Fig. 6.



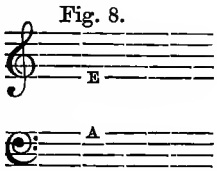
32. Taking the bass staff and proceeding each way from the F of the fourth line that is determined by the clef it will be seen that the sounds of the lines and spaces will be these

Fig. 7.



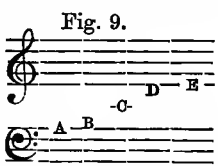
33. Placing now the staff for the higher sounds above that for the lower sounds, as they are used in the writing of music for the pianoforte, harmonium, &c.,

Fig. 8.



it will be evident by the gap in the alphabetical series that there are other sounds between the two staves. If one more sound be added above the bass staff and one more below the treble staff, the two will meet in C on a leger line that is at once the first leger line above the bass staff and the first leger line below the treble staff.

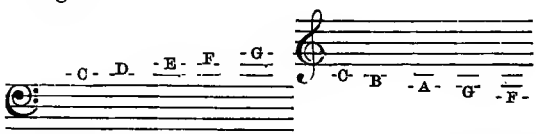
Fig. 9.



34. The C standing between the two staves is called MIDDLE C.

35. Any sound higher than that on the first leger line above the bass staff will obviously be in the domain of the treble staff, and any sound lower than that on the first leger line below the treble staff will similarly be in the domain of the bass staff.

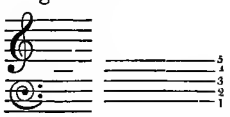
Fig. 10.



36. Music for the higher voices of women rarely goes below the first leger line of the treble staff, and music for the lower voices of men rarely goes above the first leger line above the bass staff, *i.e.*, the middle C in each case. But for the lower voices of women, when the music descends into the region of the bass staff, a second leger line below the treble staff would be necessary, and for the higher voices of men, when the music ascends into the region of the treble staff, two and three leger lines above the bass staff would more often be necessary.

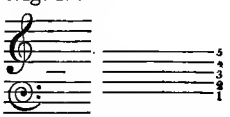
37. To avoid the multiplicity of leger lines in these cases two other staves are in occasional use. The first takes its three lowest lines from the bass staff and its fifth line from the first of the treble staff, the fourth line being the leger line of middle C.

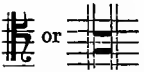
Fig. 11.



38. Another staff is formed by taking for the lower lines two from the bass staff, and for the higher lines two from the treble staff, its middle line being the line of middle C.

Fig. 12.



39. To distinguish these staves from the others a clef is used which is supposed to be a corruption of the letter C, made thus  This clef always represents the pitch of middle C. It therefore is placed on the fourth line of the staff described in § 37 and on the third line of the staff described in § 38.

40. The C clef placed on the fourth line of a staff  is called the Tenor clef, and the staff receives the name of the Tenor staff. This staff is used for the higher voices of men and for the higher range of certain instruments as the violoncello and bassoon.

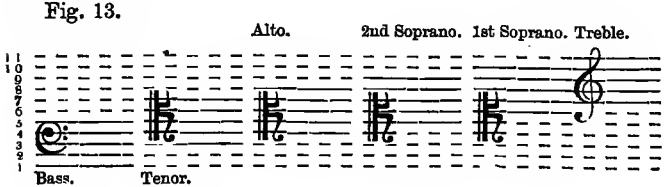
41. The C clef placed on the third line of a staff  is called the Alto clef, and the staff receives the name of the Alto staff. This staff is used for the lower voices of women and for the viola and some other instruments, but is less used for voices than the Tenor staff, except in the voice parts of German editions of full scores of classical compositions.

42. A staff is also used having the line of middle C for its first line and the other four lines from the treble staff. The C clef on the first line distinguishes this staff and gives to it the name of the Soprano staff. It is used for the higher voices of women instead of the Treble staff in the German editions just referred to.

43. Still more rarely a staff is used having for its first line the fifth of the bass staff, the line of middle C for its second, and for the rest the first three of the treble staff. The C clef comes on the second line of the staff and gives to it the name of the Second Soprano staff. Its use is almost entirely confined to the German editions referred to in previous sections.

44. The relative positions of all the foregoing staves to each other is shewn in the following diagram, which represents a staff of eleven lines.

Fig. 13.



The group of eleven lines is sometimes called the GREAT STAVE or the GRAND STAFF, but it is not in use as a separate staff.

45. It has been seen that the only sounds that are directly represented in pitch are the clef sounds—treble G, bass F, and middle C. The others are determined from these by the aid of the staves.

46. The particular pitch of notes needs sometimes to be referred to apart from their relation to any staff. The difference, for instance, between E of the third space of the bass staff and the E of the first line of the treble staff may need to be distinguished.

47. The differences in pitch between notes of the same alphabetical letter are named according to the series of notes from one C to the B above. Thus the series of notes extending from the C on the second leger line below the bass staff to the B on the second line is called the Great Octave; the series extending from C in the second space of the bass staff to the B above the staff is called the Small Octave; the series extending from middle C to the B of the third line of the treble staff is called the Once-marked Octave; and the series extending from C of the third space of the treble clef to the B above the first leger line is called the Twice-marked Octavo. The letters are printed and marked as shewn in the diagram at the side.

48. Most of the C sounds have also special names. Middle C, as has already been shewn, is distinguished as such. The C in the treble staff is called treble C or Standard C. The C above that on

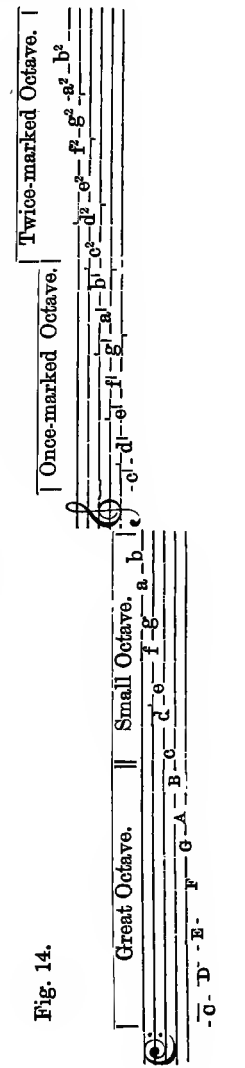


Fig. 14.

the second leger line above the treble staff is called C in *alt.* The C in the second space of the bass staff is called Tenor C, being the lowest note of the Viola.

49. It has been stated that the pitch is determined by the number of vibrations of the air in a given time. The exact differences of pitch are reckoned from one sound which is chosen as a standard. The treble C has been chosen as a pitch sound for a standard as being suitable for vocal purposes. The lowest sound distinguishable by the human ear is one that is produced by sixteen vibrations of the air in a second. This corresponds to the C that is two octaves below the C of the great octave. The sound an octave above this lowest sound gives 32 vibrations in a second. Each octave doubles the number of vibrations, so that the number of vibrations in a second of treble C is 512. This is called the Philosophical Standard, and is only a little higher than that used in the time of Handel. This standard, though based on a scientific foundation, has not prevailed, and the pitch has gradually risen till it is now a full semitone higher than Handel's tuning fork of the year 1740. The high and unsettled state of the pitch in this and other countries has brought about a movement for adopting a uniform standard. The pitch that has been officially adopted by all the principal governments of continental Europe, and which seems most likely to be adopted for a uniform standard, is reckoned from A in the second space of the treble staff—the pitch sound from which musical instruments are tuned. This A is produced by 435 vibrations in a second, and is known as the French Standard Pitch or *Diapason normal.* This gives for treble C 517$\frac{1}{3}$ vibrations.

CHAPTER IV.

NOTATION OF TIME.

50. The relative durations of sounds are expressed in characters called Notes, differing in shape or form. By the position on the staff the note represents the pitch of the sound, and by the form or shape of the note the relative length of the sound.

51. There are in common use at least six forms of notes. These, with the names by which they are known, are as follows—

The Semibreve, or Whole Note.

The Minim, or Half-note.

The Crotchet, or Quarter-note.

The Quaver, or Eighth note.

The Semiquaver, or Sixteenth note.

The Demisemiquaver, or Thirty-second note.

The proportional names shew the relative values that each bears to the whole note and to each other.

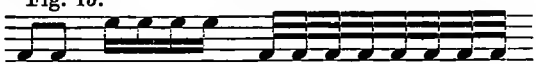
52. The semibreve may be described in form as a round white note; the minim as a white note with a stem; the crotchet as a black note with a stem: the quaver, semiquaver, and demisemiquaver as a crotchet with one, two, and three hooks respectively. The stems of notes may be turned up or down according to circumstances. When the head of the note is below the middle line of the staff the stem is turned up on the right hand side of it, and when the head of the note is above the middle line the stem is turned down on the left hand side of it.

53. Occasionally a note is still used that is twice the length of the semibreve, written thus  , called a Breve from its original use in ancient music, when it was a short note.

54. Still rarer than the last a note is used of half the length of the demisemiquaver, having four hooks, thus  and called a *semi*demisemiquaver.

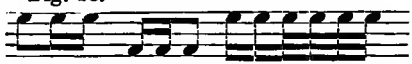
55. When notes having hooks occur in succession they are frequently grouped together by bands which take the place of hooks. Notes of equal value may be so grouped, thus

Fig. 15.



or of different values thus

Fig. 16.



56. Any single note is of the proportionate value of one half the note of the next higher in value, as seen by the proportional names of the notes in § 51. But other proportionate values have to be provided for. This is mostly accomplished by dots. A dot placed after a note adds one half to the original value of it. Thus a dotted minim 𝅗𝅥. is equal to three-fourths of the semibreve, or to three crotchets; a dotted crotchet ♩. is equal to three-fourths of a minim, or to three quavers, and so on. The dot is placed close to the note to which it belongs. If the note is on a line the dot is placed in the space above unless the next note is on a lower degree of the staff, when the dot may be placed in the space below. See Fig. 35, p. 19.

57. The value of a note may be further increased by the addition of a second dot. The second dot adds half the value of the first, so that the two together add three-fourths to the original value of the note. Thus a minim followed by two dots 𝅗𝅥.. is equal to the combined value of a minim, crotchet, and quaver (𝅗𝅥 ♩ ♪), or to seven quavers; a crotchet followed by two dots ♩.. is equal to a crotchet, quaver, and semiquaver (♩ ♪ 𝅘𝅥𝅯) combined, or to seven semiquavers, and so on.

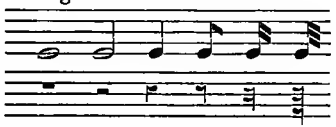
58. The same duration values that are accomplished by adding dots after a note, as well as other proportionate values, can be effected by two or more notes joined together and made practically one by a Tie or Bind ⁀, used thus—

Fig. 17.

59. As the sounds of music are in measured time and are represented by notes so the cessations of sound or silences in music are equally regular, and are represented by characters called Rests.

Each note has its corresponding rest and is named after the note which it equals in length, as a semibreve rest or whole-note rest, minim rest, &c. The following shows the rest for each note, and the position each respectively occupies upon the staff.

Fig. 18.



60. It will be seen that there is very little difference between the semibreve and minim rests, but the longer rest depends from the line—usually the fourth line—and the shorter (minim) rest stands on the line—usually the third line. There is as little difference in the crotchet and quaver rests, but the crotchet rest turns its head to the right and the quaver rest turns its head to the left.

61. In consequence of the similarity of these crotchet and quaver rests a new form has been invented for the crotchet rest, which is now of almost universal use. It is made thus 𝄽

62. As the original value of a note is increased by adding dots the value of rests can be increased in like manner and in the same proportion. Thus 𝄻 • is equal to 𝄻 𝄾 Except, however, in compound measures, to be presently described, the dotted rests are little used.

CHAPTER V.

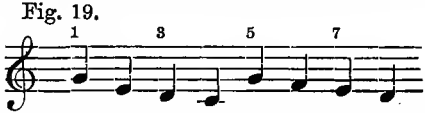
ACCENT AND MEASURE.

63. The elements of Tune thus far noticed are the variety in the sounds as regards the difference in pitch, and the variety as regards the duration of the sounds. Another element now to be noticed is the variety in the force or intensity (§ 6) of the sounds.

64. A sound that is more emphasised than its immediate neighbour is said to bear ACCENT.

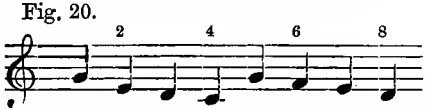
65. The grouping of sounds as to their pitch may be the same in one melody as in another, and the duration value of the sounds may be the same in each, but the tune will vary according to which of the sounds are accented. Thus in the following group of sounds

Fig. 19.



accents may be placed on the first and succeeding odd numbered notes as marked, or accents may be placed thus

Fig. 20.



on the second and succeeding even numbered notes, which gives quite a different tune from the other.

66. The regular recurrence of accented sounds is a primary element of the rhythm of music.

67. The order of the recurrence of the accented sounds determines the division of the music into measures.

68. The principal accented sound is shewn by a line drawn before it across the staff  This line is called a BAR.

69. The space between one bar and the next, or that which is contained between them is called a MEASURE.

70. There are several kinds of measures, the variation between them consisting principally in the number of equal parts in which the measure is said to be divisible, as two, three, or four, &c. These unit divisions of the measure are called BEATS or PULSES. The

number of beats or pulses in a measure, in conjunction with the order of the recurrence of accent, produces various species of Time.

71. When the measure is divisible into two pulses the time is called Duple. In this there is but one accented pulse in the measure, viz., the first pulse as indicated by the bar. The examples in § 65 are both in Duple time, the accent on every other sound dividing the music into measures of two pulses or beats each, though in the one example the music begins with an accented pulse, and in the other with an unaccented pulse. The two examples would be thus barred

Fig. 21.

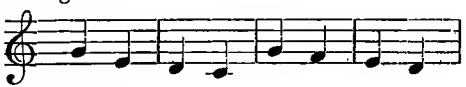
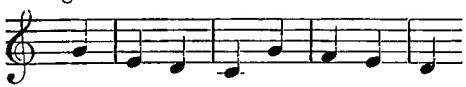


Fig. 22.



72. In the first of these examples the first measure is complete. In all cases in which the music begins with a complete measure the first bar comes at the accent of the second measure—the bar that should mark the first accent is omitted, being understood. On the other hand, a bar is used at the end of the line when the measure is complete. A bar in this case can be considered as marking accent only in respect to the first note in the following line, where the bar is again omitted as in the cases in which the music commences with a complete measure. (See Fig. 30.) In the second example the first measure is incomplete; it is only half a measure. In all cases in which the music begins with an incomplete measure the music or the main section of it will end with an incomplete measure, to balance the incompleteness of the first.

73. Two lines side by side, called a Double Bar, are used to mark the close of a musical composition, or for the close of a principal movement or division of it. See an example in Fig. 30.

74. In the examples in § 71 the crotchet is used as the unit of the measure, but any other note could be used for the unit of the measure, and the music would be practically the same. Thus the first example might be written in either of the two following ways—

Fig. 23.

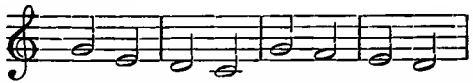
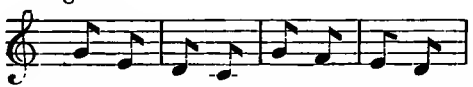


Fig. 24.

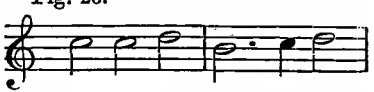


75. When the measure is divisible into three pulses the time is called Triple. In this, as in Duple time, there is but one accented pulse, the other two pulses being both unaccented. The National Anthem is written in this triple time. The first two measures, with the crotchet used for the unit, would stand thus

Fig. 25.

But the same music could be expressed with the minim or quaver, or any other note for the unit. Using the minim, the music would be thus written

Fig. 26.



76. When the measure is divisible into four pulses the time is called Quadruple or Common. This measure is almost equivalent to the union of two duple measures. There are two accented pulses—the first, which may be called the primary accent, and the third, which may be called the secondary accent. The second and fourth pulses are unaccented. The following is an example of this measure with the minim, crotchet, and quaver severally used for the unit

Fig. 27.

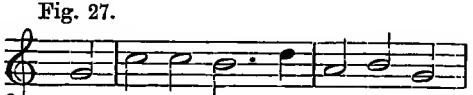


Fig. 28.

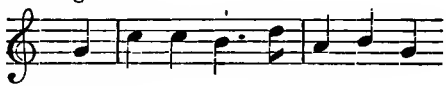
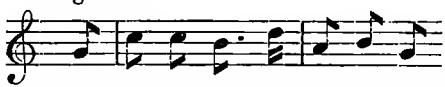
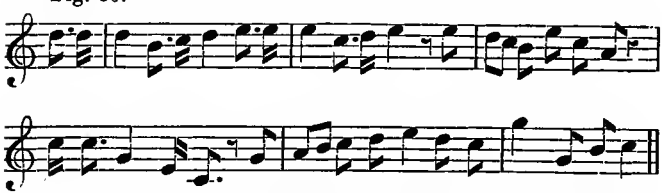


Fig. 29.



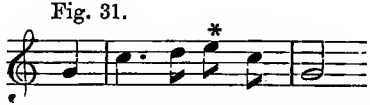
77. In the foregoing examples of the different measures it is seen that the measures within the same example are not all made up in the same way, but the value is the same in each measure. The value may be made up of rests as well as of notes. Each pulse, too, may be subdivided by notes or rests of less value than the unit of the measure. In the following excerpt from an air by Dr. Boyce the value of four crotchets is in each measure made up in a different way.

Fig. 30.



78. When a pulse is subdivided a secondary accent is produced. Thus if there be two notes within the pulse, as in the following example

Fig. 31.



there will be an accent on the first note of the divided pulse almost equal to the secondary accent of the quadruple measure.

79. All the measures just noticed are termed simple—as simple duple, simple triple, simple quadruple—when necessary to distinguish them from the forms which are next to be described. When the measures are simple the music is said to be in SIMPLE TIME.

80. In the simple forms of the measures the subdivision of the pulses is usually by notes or rests of the value of halves, or quarters, or eighths of the pulse.

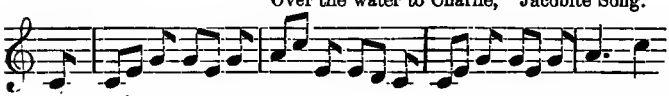
81. Another form of the measures is that in which each pulse or beat is subdivisible into three. The measures in this form denote COMPOUND TIME.

82. None of the notes used for the unit of simple measures admit of equal subdivision *by three*. To allow of such a subdivision the note representing the undivided pulse of a compound measure is always a dotted note.

83. The compound form of duple time has, therefore, in each measure two dotted notes, as two dotted crotchets or their equivalents, *i.e.*, the value of a dotted crotchet, which may be made up by quavers, grouped when possible, or of a crotchet and a quaver; or the measure may be expressed with two dotted minims or their equivalents in subdivisions of notes of less value, *i.e.*, in crotchets or minims and crotchets. The following is an example of compound duple time with the dotted crotchet for the full pulse of the measure.

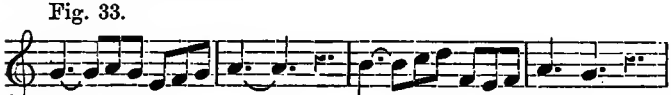
Fig. 32.

"Over the water to Charlie," Jacobite Song.



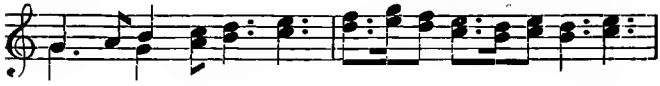
84. The compound form of triple time has three dotted notes in each measure, as dotted crotchets or their equivalents in quavers, or crotchets and quavers; or the measure may be expressed by three dotted minims or their equivalents. The following is an example of compound triple time with the dotted crotchet for the full pulse of the measure.

Fig. 33.



85. The compound form of quadruple or common time has four dotted notes in each measure, as dotted crotchets or their equivalents; or the measure may be expressed by four dotted minims or their equivalents. The following is an example of compound quadruple time with the dotted crotchet for the full pulse of the measure.

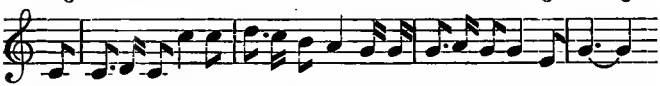
Fig. 34. "Pastoral Symphony," *Messiah.*



86. In all these compound measures where the pulse is divided there is a secondary accent on the first note of the pulse as explained for the subdivision of the pulse in simple time in § 78.

87. Each of the triple divisions in these compound measures may be again subdivided. These lesser divisions are usually in equal halves, and the first half is often made the extension by that much of the previous note that divides the pulse into three. See the following example.

Fig. 35. Old English Song.



88. In performance of music by a number of executants the principal divisions of the measures are marked by a conductor with a baton, who, as it is termed, "beats the time." That is, he marks the time at each beat or pulse.

89. The method of beating duple time is, down—up; of triple time, down—left—up, or with some conductors, down—right—up; and of quadruple time down—left—right—up.

90. The beating is the same whether the form be simple or compound, unless—in the latter especially—the music moves slowly and the pulses are often and minutely divided, when it is customary to indicate the principal subdivisions of the pulses by smaller movements of the baton. The methods vary with the different kinds of time as well as with the different fancies of the conductor.

CHAPTER VI.

TIME SIGNATURES.

91. The kind of measure and the kind and number of notes employed in it are usually expressed at the commencement of a musical composition by a sign called a TIME SIGNATURE.

92. The Time Signatures mostly consist of figures written in the form of fractions one above another. The lower figure has reference to the whole note or semibreve. The upper figure gives the number of notes in the measure of the kind represented by the lower figure. As in a semibreve there are two minims the numeral 2 represents a minim. Therefore $\frac{2}{2}$ means two minims in a measure. As in a semibreve there are four crotchets the numeral 4 represents a crotchet. Therefore $\frac{3}{4}$ means three crotchets in a measure. And so on.

93. It has been seen that in a measure of duple time there are two principal divisions, that in a measure of triple time there are three principal divisions, and that in a measure of quadruple time there are four principal divisions. In the time signatures of these the upper figure is 2, 3, and 4 respectively. But the lower figure of the signature differs according to the kind of note used for the unit, as shewn in sections 74-76.

94. The upper figure in a signature of compound time is a multiple by three of the upper figure of the corresponding simple time signature as $(2 \times 3 =) 6$, $(3 \times 3 =) 9$, and $(4 \times 3 =) 12$ respectively. The lower figure denotes, as before, the kind of note as regards proportional value to the semibreve, but instead of its representing, as in simple time, the pulse of the measure, it represents the note of the smaller (triple) divisions which usually occur within the pulse. Thus in $\frac{3}{4}$ a signature of simple triple time the 4 represents the pulse or beat, but in $\frac{6}{8}$, a signature of compound duple time which contains the same quantity as the other, the lower figure 8 represents the notes by which the principal pulses or beats are (or supposed to be) subdivided.

95. Both in simple time signatures and compound time signatures the lower figure represents what is technically called the unit of the measure.

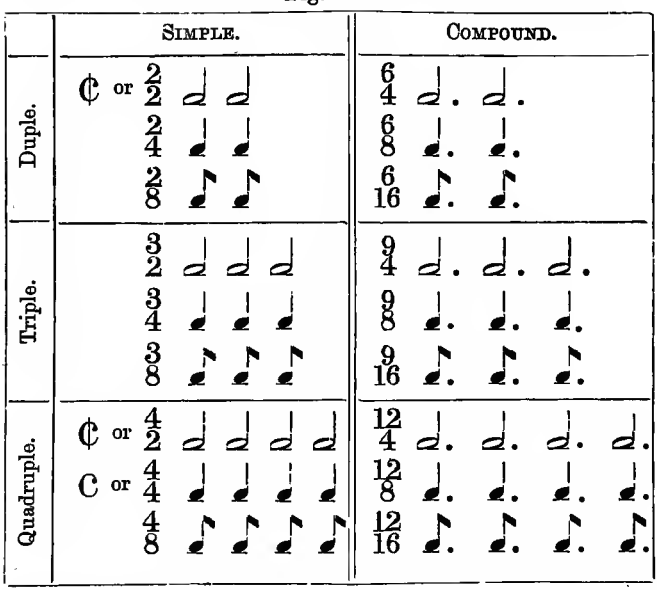
96. In common or quadruple time the signature, instead of being expressed in figures, is often represented by a C

97. In simple duple time when the unit is a minim the signature is sometimes represented by a barred C thus ¢ instead of by $\frac{2}{2}$. This is called *Alla breve* or *Alla capella* time.

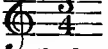
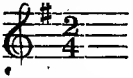
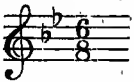
98. Again, in common or quadruple time when the unit is a minim the signature is also occasionally represented by ¢ especially in church music. This had some meaning in former times, when the breve was reckoned as the whole note, but to use ¢ now for a quadruple measure instead of $\frac{4}{2}$ is most confusing, and the practice is exceedingly reprehensible.*

99. The following is a table of the signatures in present use.

Fig. 36.



* The author agrees with the late Dr. Hullah, who said it was greatly to be desired that all these characters were banished from the Time Table, and that the signatures were confined to numbers.

100. The time signature is placed on the staff immediately after the clef, thus  or immediately after the sign or signs that constitute the key signature (to be described in next chapter) thus  or 

101. The time signature is not repeated, but if in the course of the music the measure is changed it is indicated by a new time signature.

CHAPTER VII.

THE MAJOR SCALES AND KEY SIGNATURES.

102. It has been seen in Chap. II, § 13 to 17, what is the construction of a major scale, and that the successive sounds thereof are not all equidistant. It has also been seen in Chap. IV that musical sounds are, notwithstanding, written upon a series of equidistant parallel lines and the spaces between them. It is obvious, then, that the staff cannot accurately represent the different distances of the sounds found in the scale; the semitones between the third and fourth and between the seventh and eighth (§ 17) shew as much distance between them on the staff as the tones.

103. A similar want of correspondence in appearance with the actual difference of distance of one sound from another is observable in a pianoforte key-board (see fig. 37) where the white notes or digitals are all equidistant but the sound-distances between E and F and between B and C are but half the distances of the others.

104. The places of the smaller distances on the staff are, then, assigned by the alphabetical pitch names; the semitones occur between E and F and between B and C

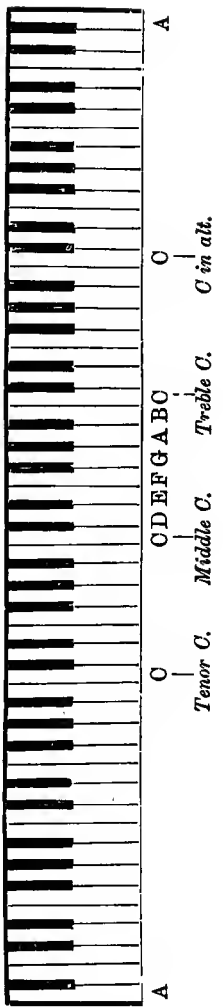
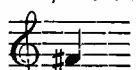


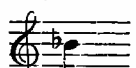
Fig. 37. FINGER-BOARD OF THE PIANOFORTE.

105. If any C be taken for the first of a scale it will be found that the tones and semitones occur in the order named in § 17 that form a major scale. Such a scale would be called, after the pitch note upon which it is raised, the scale of C. This scale is also called the Standard Scale.

106. Other major scales are formed, not only upon each of the pitch notes represented by the other six letters of the alphabet, but also upon artificial alterations of these notes.

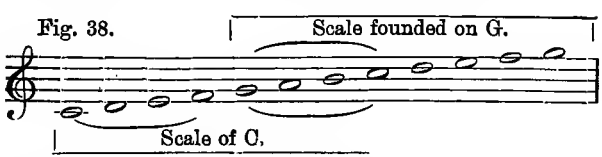
107. Other semitones are created between the tones of the standard scale by raising the lower sound of two that are a tone apart, or by lowering the upper sound of the two.

108. To raise a sound, as F, by a semitone, this character ♯, called a sharp, is used before the note thus  and the note is then called F sharp, or sharpened F.

109. To lower a sound, as B, by a semitone, this character ♭, called a flat, is used before the note thus  and the note is then called B flat,* or flattened B.

110. It has been seen in § 18 that the major scale is made up of two tetrachords each of which is crowned by a semitone. If a scale be raised on G it will be seen that the first or lower tetrachord corresponds to the second or upper tetrachord of C

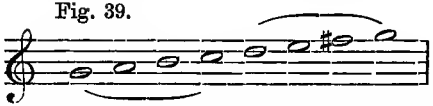
Fig. 38.



but that in the upper part of the scale being formed the sounds do not proceed in the order required for the second tetrachord; the semitone does not crown the tetrachord or come between the seventh and eighth tones of the scale. The order is corrected by artificially raising the F by a ♯, which gives a whole tone from the E below and leaves a semitone between the sharpened F and the final G, thus—

* B flat by the Germans is called B. The B, unaltered, they call H.

Fig. 39.



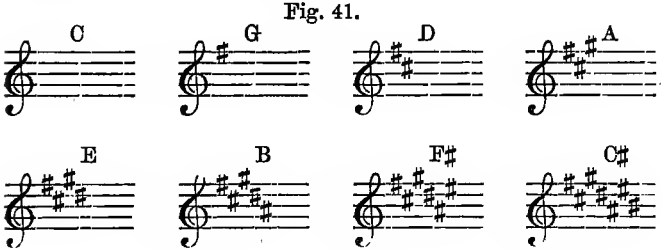
111. As the upper tetrachord of C was taken for the foundation or lower tetrachord of a scale of G so the upper tetrachord of G would form the lower tetrachord of another scale of D, and a series of scales could be formed in like manner; each new scale standing in the relation of a fifth above the former one, or, what is practically the same thing, a fourth below, and each requiring an additional sharp for the upper tetrachord, as seen in the table of Fig. 40 on next page.

112. In the table just referred to it will be noticed that the last two scales are raised upon notes that are themselves artificially altered, as mentioned in § 106.

113. When music is written in any of the foregoing scales the sharps, instead of being placed against each note as it occurs, are placed altogether on the staff immediately after the clef, forming what is called the KEY SIGNATURE. It is understood that all the notes of the alphabetical name of the sharps in the signature are affected by those signs throughout the music.

114. The following are the signatures in the treble staff of the several keys with sharps shewn in the table of Fig. 40. The scale of C having no altered notes the clef alone stands for the key signature.

Fig. 41.



115. The alphabetical order of the sharps in the scales is the same as the order of the scales themselves. Each sharp is in the relation of a fifth above the previous one, but for the sake of symmetry the sharps are on the treble and bass staves placed in the

Fig. 40. (See § 111, p. 25.)

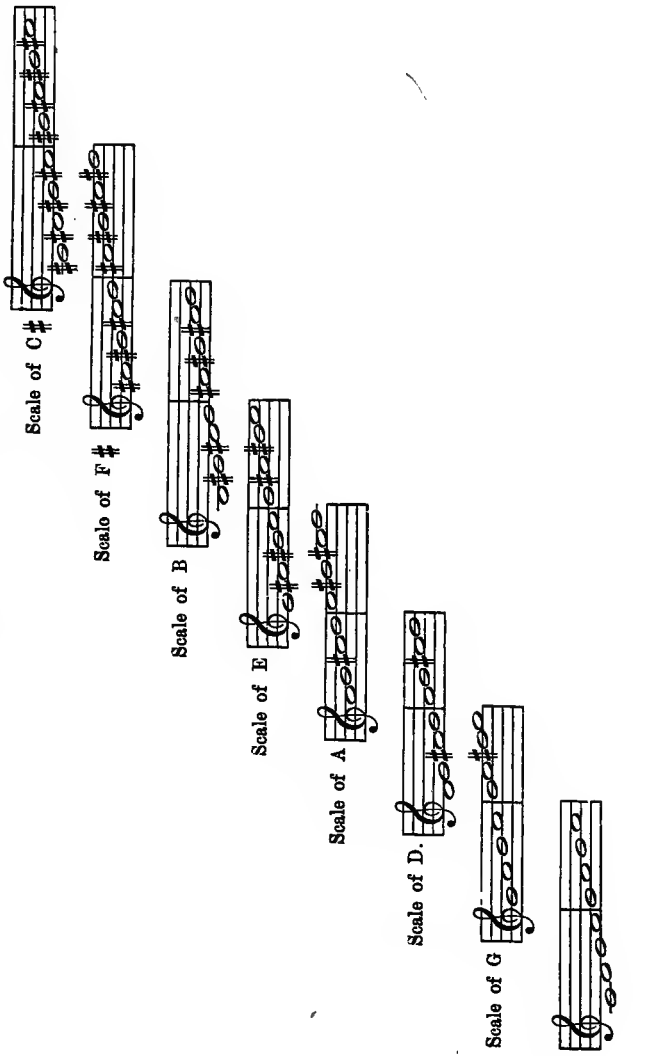
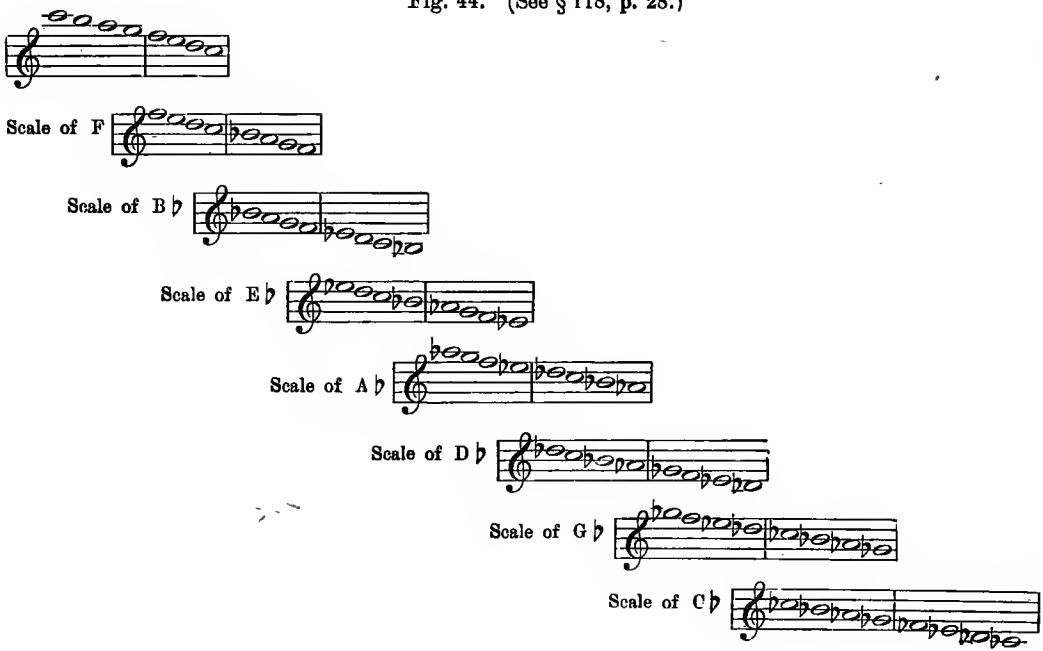


Fig. 44. (See § 118, p. 28.)

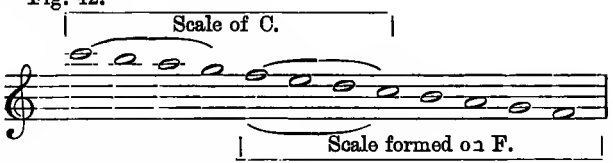


signature alternately a fourth below and a fifth above up to the fourth sharp, when the next is again a fourth below the previous one instead of a fifth above.

116. The last written sharp of a signature is always the seventh or leading-note of the scale, so that the next note above of the alphabetical series will give the pitch note of the scale represented.

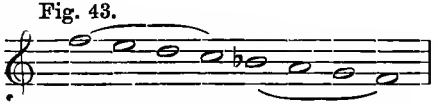
117. Another series of scales is formed by taking the lower tetrachord of the standard scale as the upper of a new scale of F, and proceeding downwards, thus

Fig. 42.



Here it will be seen that in the lower part of the scale being formed the sounds do not produce a tetrachord. The proper order of tones and semitones is obtained by lowering the B by a ♭, which gives a semitone for the tetrachord and leaves a whole tone between the two tetrachords (§ 18).

Fig. 43.



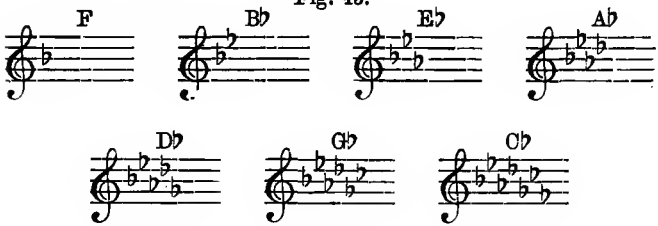
118. The lower tetrachord of this scale of F would in its turn form the upper tetrachord of a scale of B♭, and a series of scales with flats could be formed in like manner; each new scale standing in the relation of a fourth above the previous one, or what is practically the same thing, a fifth below, and each requiring an additional flat for the lower tetrachord, as seen in the table of Fig. 44, on previous page.

119. All but one of the scales with flats are seen to be formed upon notes that are in the first instance lowered by a flat, and illustrate what was said in § 106.

120. When music is written in any of the foregoing scales, the flats, as in the scales with sharps, are placed altogether on the staff after the clef, as a key signature, and they affect all the notes of the same alphabetical name throughout the music.

121. The following are the signatures in the treble staff of the several keys with flats.

Fig. 45.



122. The alphabetical order of the flats in the scales is, as in the signatures with sharps, the same as the order of the scales themselves. Each flat is a fourth above the previous one, but for the sake of symmetry the flats are on the treble and bass staves placed in the signature alternately a fourth above and a fifth below.

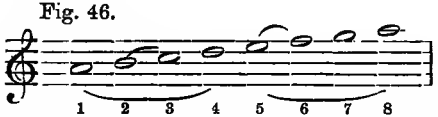
123. In all the signatures with flats after F the last written flat but one is the pitch note of the scale represented.

CHAPTER VIII.

THE MINOR SCALES AND KEY SIGNATURES.

124. It was said in § 17 that there was more than one form of diatonic scale. Formerly there were *many* other forms than the one that has been already described, but the only other form now in use is that of which the following, having A for its first and final notes, forms the model.

Fig. 46.



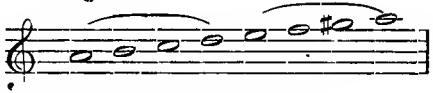
125. In this scale the semitones fall in different places from those of the major scale. They come between the second and third and between the fifth and sixth sounds.

126. Such a scale as this is called a MINOR SCALE, so named because the distance from the first to the third is smaller, *i.e.*, a semitone less than in the major scale.

127. The smaller distance between the first and third is the chief characteristic of a minor scale, and in the particular form of the minor scale that is now in use, which may be called the modern minor scale, the first tetrachord, with its semitone between the two tones, is invariable. Not so the upper tetrachord, as will now be shewn.

128. The upper tetrachord of the minor scale shewn in Fig. 46 is like that of the major scale turned upside down; the semitone is at the bottom instead of the top. The effect in ascending with a whole tone between the seventh and eighth is not satisfactory. To provide a proper leading tone (§ 19) the seventh sound is therefore artificially raised, thus—

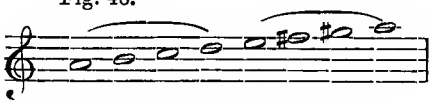
Fig. 47.



This form is called the Harmonic Minor Scale.

129. The alteration of the seventh sound leaves a greater distance than a tone between the sixth and seventh, and the two sounds with this large interval between them can only succeed each other (as melody) in certain exceptional circumstances. The sixth is therefore occasionally raised as well as the seventh, thus—

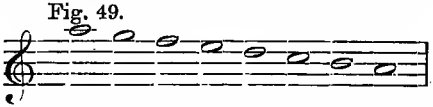
Fig. 48.



This form is called the Altered Diatonic Minor Scale.

130. In descending melody the order of tones and semitones of the original minor scale is mostly maintained, thus—

Fig. 49.



131. As this scale of A minor in its original form has no altered notes no sharps are required for a signature. The clef sign alone, as in the case of C major (§ 114) is sufficient. The sharps necessary to raise the seventh and sixth are introduced against those respective notes of the scale as they may be required in the course of the music.

132. The presence of the character necessary to raise the seventh of the minor scale, which is the note chiefly altered, is that by which a melody in the minor scale is most readily distinguished from one in the major scale.

133. The notes of this scale of A minor, in its original form, being all found in the major scale of C, the minor scale of A is said to be the relative minor of the major scale of C, and, *per contra*, the major scale of C is said to be the relative major of the minor scale of A.

134. The minor scale begins on the sixth of the relative major, and the major scale begins on the third of the relative minor.

135. As in the altered diatonic form of the minor scale (Fig. 48) the upper tetrachord is precisely the same as in the scale of A major (Fig. 40) the scale of A minor is also said to be related to that major scale as the MINOR OF THE SAME TONIC.

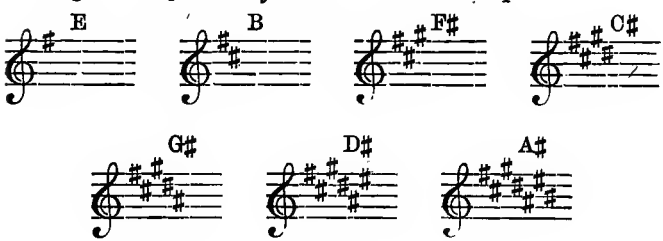
136. Every major scale has its relative minor scale, similarly formed and subject to the same variations as the scale of A minor.

137. Each minor scale is called after the pitch of its first note, and may be said to be related not only to the major scale of the third above, but (as shewn in § 135) to the major scale of the same pitch note as its first or tonic.

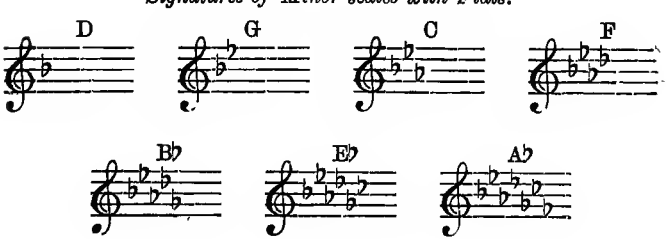
138. The relative minor and major scales being formed mainly of the same notes there is no difference in the signatures.

139. All the signatures of the major scales given in Fig. 41 and Fig. 45, represent also the signatures of the relative minor scales, thus—

Fig. 50. *Signatures of Minor scales with Sharps.*



Signatures of Minor scales with Flats.



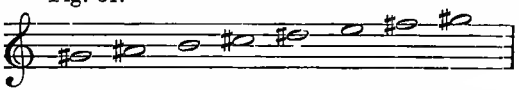
CHAPTER IX.

ACCIDENTALS AND CHROMATIC SCALE.

140. In some of the minor scales some different characters from those already described will be required for raising the seventh for a leading note.

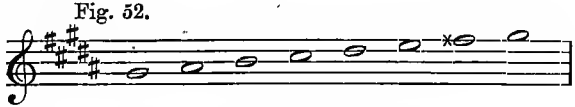
141. If the scale of G♯ minor be taken in its original form, thus

Fig. 51.



it will be seen that the seventh sound has already a sharp against it. To raise this sound so as to bring it within a semitone of the final it must be doubly sharpened. This is effected by this character x, called a double sharp, which raises the note against which it is placed by a whole tone. The harmonic form of this scale of G♯ minor with the essential sharps in the signature, would be written thus

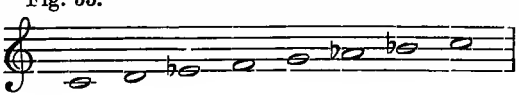
Fig. 52.



142. A double sharp would be required for a leading note in all the other minor scales having more sharps in the signature than this.

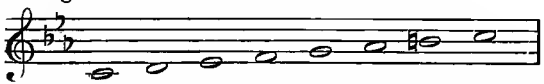
143. If the scale of C minor be taken in its original form, thus

Fig. 53.



it will be seen that to bring the seventh within the semitone of the final it is only necessary to remove the flat against the B. But as the flat appears in the signature it cannot be actually removed. This character ♮, called a natural, is used, which, as its name implies, restores the note against which it is placed to its original pitch. The harmonic form of this scale of C minor, with the essential flats in the signature, would be written thus—

Fig. 54.

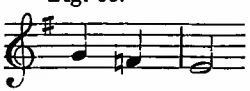


144. A natural would be required for a leading note in all the other minor scales having more flats in the signature than this.

145. A natural used before a note that is already flat in the signature effects the same purpose as a sharp used before a note that is natural in the signature, as has been already seen in § 143 and Fig. 54.

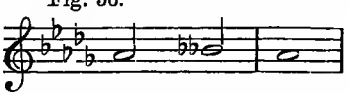
146. Similarly, a natural used before a note that is already sharp in the signature effects the same purpose as a flat placed before a note that is natural in the signature, thus—

Fig. 55.



147. Occasionally—in major keys with flats especially—a note is required to be lowered from its normal pitch a whole tone. This is effected by placing two flats before the note, thus—

Fig. 56.



there being no separate character in use for a double flat.

148. All the foregoing characters, sharps, flats, and naturals, when used in the course of the music are known by the generic name of ACCIDENTALS.

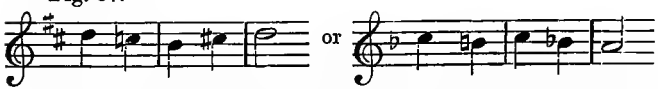
149. The double sharp and double flat can only be used as accidentals. They are never found in a signature.

150. An accidental affects all the notes within the measure of the same alphabetical name as that against which it is was first used, unless it be contradicted by another accidental to restore the note according to the signature.

151. If the last note in a measure is an altered note and the first note of the next measure is of the same alphabetic name, the accidental in the previous measure affects also the note or notes in this succeeding measure. But the practice is to repeat the accidental in this case for greater clearness.

152. Although an accidental does not, except in the case just stated, extend its effect beyond the measure in which it occurs, it is customary, if the note that has been altered occure in the following measure, to restore the sign of the note according to the signature, thus—

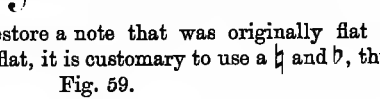
Fig. 57.



153. The use of the restoring sign in each of these cases is as a caution. Hence CAUTIONARY ACCIDENTAL is the term applied to the sign in such circumstances. The use of the cautionary accidental in any other part than that in which the first accidental appeared is generally productive of confusion.

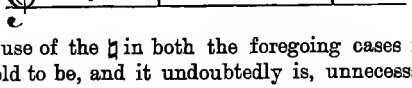
154. To restore a note that was originally sharp (in the signature) and has been made doubly sharp (by x) it is customary to use a ♮ and ♯, thus—

Fig. 58.



155. To restore a note that was originally flat and has been made doubly flat, it is customary to use a ♮ and ♭, thus—

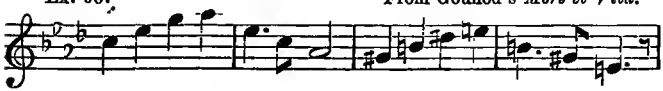
Fig. 59.



156. The use of the ♮ in both the foregoing cases is by many musiciane held to be, and it undoubtedly is, unnecessary. There are but few, however, that at present have the courage to omit the ♮ in such circumstances.

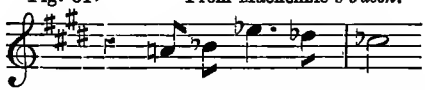
157. When a note that is flat in the signature needs to be raised to a sharp of the same name no previous ♮ is required before the ♯. See the ♯ D in the third measure of the following—

Ex. 60. From Gounod's *Mors et Vita.*



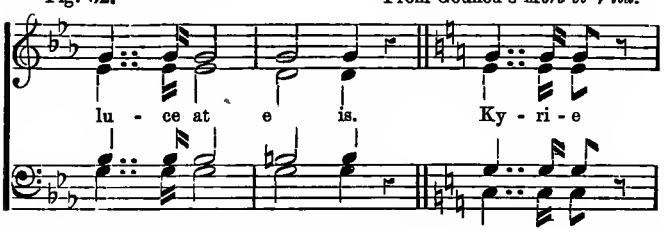
158. And when a note that is sharp in the signature needs to be lowered to a flat of the same name no previous ♮ is required before the ♭. See the ♭ D and ♭ C in the following—

Fig. 61. From Mackenzie's *Jason.*



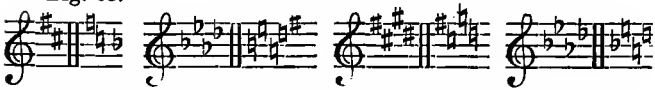
159. Another use of the natural remains to be noticed. This is when for a new movement in the so-called open key of C major or of A minor the original or previous signature has been one having flats or sharps. In such a case naturals will be necessary to counteract the signs of the former signature, thus—

Fig. 62. From Gounod's *Mors et Vita.*



160. When a new signature is required that expresses a change from a signature with sharps to one with flats, or, *vice versa*, from one with flats to one with sharps, or a change is required to a signature with a less number of sharps or a less number of flats respectively than that of the previous signature, it is still the custom with some authors and publishers to replace the sharps or flats not wanted with naturals, thus—

Fig. 63.



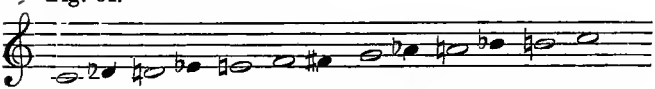
The naturals are not, however, necessary, and certainly do not increase the perspicuity of the new signature.

161. Between any two sounds that are a tone apart a semitone can be introduced as shewn in § 107. A succession of sounds embracing an octave and proceeding by semitones is termed a CHROMATIC SCALE.

162. The chromatic scale has no separate use like the major and minor scales, but is simply an ornamentation, or, as its name implies, a coloured form of an ordinary scale.

163. The chromatic scale has its interposed semitones variously written. But the modern form, which is considered the most theoretically correct, is as follows—

Fig. 64.



in which every new semitone is the flattened note of the one above, except that lying between the fourth and fifth notes of the original scale, which is universally written as the sharpened note of the one below. This form of the scale is convenient for explaining harmonies that comprise these altered notes, and the form is called by some writers the HARMONIC CHROMATIC SCALE.

164. The chromatic scale is, however, in practice, often written in ascending with every introduced semitone as the sharpened note of the one below, and in descending with every introduced semitone (excepting that named in previous paragraph) as the flattened note of the one above, thus—

Fig. 65.

This is called the ARBITRARY CHROMATIC SCALE.

CHAPTER X.

ENHARMONIC CHANGE.

165. It has been seen that a double sharp raises a sound by a whole tone and a double flat lowers a sound by a whole tone. So that, practically, a note thus altered that originally has its next scale note a whole tone above or below, as the case may be, is raised or lowered to the pitch of that next scale note above or below. Thus 𝄫A is equal to G, and ×F is equal to G. Where the semitones occur in the standard scale a single sharp or flat raises or lowers the sound to the pitch of the next note in the scale. Thus, ♯E equals F, and ♭C equals B.

166. An alteration of the names of notes that are identical in pitch, such as just described, is termed an ENHARMONIC CHANGE.

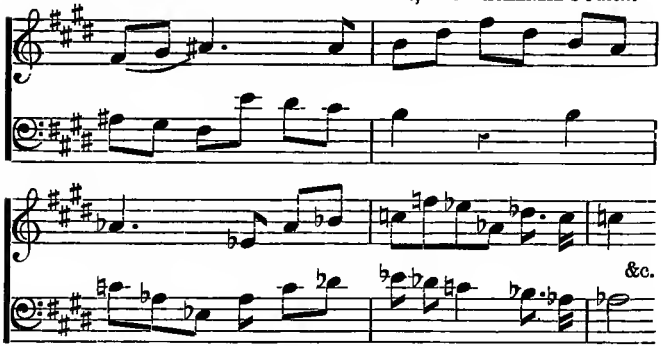
167. Every note in pitch is capable of a triple representation, except that lying between G and A, which can only be represented in two forms, as ♯G or ♭A. Thus E can be represented as ×D or ♭F, G as ×F or 𝄫A, and so on.

168. By comparing the scales with sharps and the scales with flats (Figs. 40 and 44) it will be seen that the three with the greatest number of sharps are identical with the three with the greatest number of flats; the scale of B is identical with the scale of C♭, &c. In these scales which are identical the one is the enharmonic of the other.

169. When in a key with a number of flats in the signature a brief change takes place to another key that would require several double flats to express it, the composer usually writes the notes in a key with sharps that is the enharmonic equivalent to the one with flats. Thus in Fig. 60, of § 157, the last two measures are written in the notation of the key of E, as the equivalent of what is really the key of F♭.

170. Similarly in a key with a number of sharps in the signature a change to another key that would require a number of double sharps to express it is written in a key with flats of the enharmonic equivalent. Thus in the following passage—

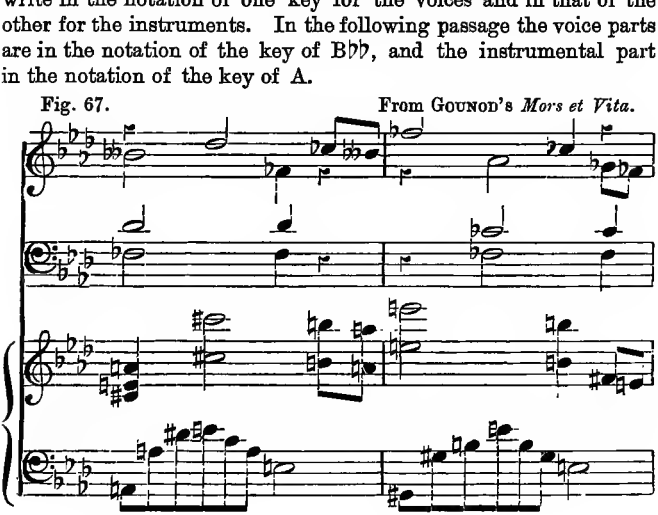
Fig. 66.
From the Duet and Chorus "Hero of Hellas," in MACKENZIE'S *Jason.*



the notation of A♭ is used from the second measure onwards as the enharmonic of the key of G♯.

171. Sometimes a passage is simultaneously expressed in two differently written keys, the one the enharmonic of the other, in different parts of the score. This is usual when it is convenient to write in the notation of one key for the voices and in that of the other for the instruments. In the following passage the voice parts are in the notation of the key of B♭♭, and the instrumental part in the notation of the key of A.

Fig. 67. From GOUNOD'S *Mors et Vita.*

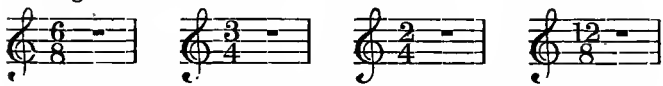


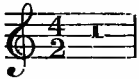
CHAPTER XI.

TIME MODIFICATIONS.

172. Silence for a whole measure in any kind of time but $\frac{4}{2}$ is expressed by a semibreve rest.

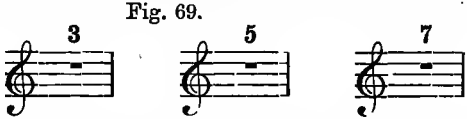
Fig. 68.



173. In the $\frac{4}{2}$ time the silence of the whole measure is expressed by a rest corresponding to the breve (§ 53) thus 

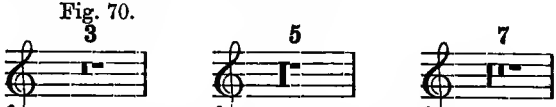
174. In the separate parts for voices or instruments where a number of measures' silence is required it is expressed either by writing the number of measures over the semibreve rest, thus

Fig. 69.



or the quantity is made out in rests to the value, in which not only the breve rest is utilized, counting as two measures, but an extended form of it, as used in old music for the next higher note in value, called the *Long*, thus  which counts as four measures. These are combined as follows

Fig. 70.



175. It is often optional to write a continuous sound in the way shewn in § 57, with dots, or as shewn in § 58, with a tie. But if a

continuous sound extends over two measures it must be written with tied notes, thus—

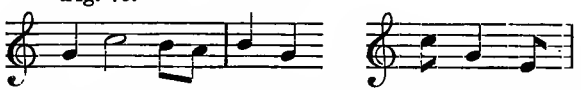
Fig. 71.

though formerly such passages were written thus—

Fig. 72.

176. In the foregoing examples, and in these—

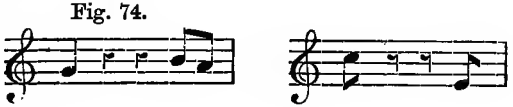
Fig. 73.



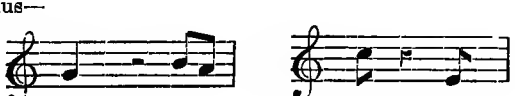
in which the sound commenced on the unaccented division is continued over the accented division, is illustrated the effect called SYNCOPATION. The natural accent is thus anticipated, and the commencement of the sound receives a stress equal to an ordinary accent.

177. While one sound begun on an unaccented pulse and extending over an accented pulse may be expressed, as in these cases of syncopation, by one note, the silence for such portions of the measure must in all cases be expressed by separate rests for each pulse division. Thus silence for that portion of the measure corresponding to the second note in the two previous examples would be written thus

Fig. 74.

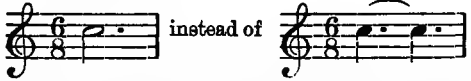


not thus—



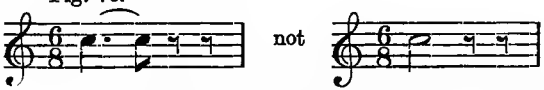
178. In compound time a sound lasting the whole measure may be written in one note, thus

Fig. 75.



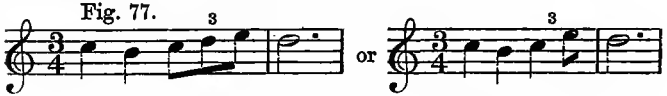
But if a sound extends from one division over a portion only of a second division it must be expressed by tied notes of the kind used for the separate divisions, thus

Fig. 76.



179. A pulse in simple time is sometimes divided as in compound time, into three. A figure 3 is placed over the notes comprised within the pulse, and the group is called a TRIPLET.

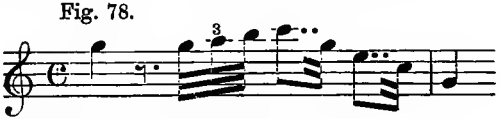
Fig. 77.



180. When several successive pulses are in triplets the effect is that of compound time. In these cases often the first triplet only is marked with the 3, and the rest are understood, especially when the notes are quavers or notes of less value, and are grouped in threes or sixes.

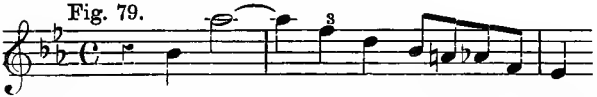
181. A portion of a pulse may be divided into three

Fig. 78.



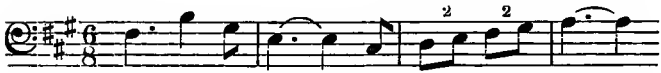
or two pulses may be equally divided into three

Fig. 79.



182. A pulse in compound time is also sometimes divided as in simple time by two, when a figure 2 is placed over the notes comprised within the pulse, and the group is called a COUPLET.

Fig. 80. From MACKENZIE'S *Jason*



183. Other occasional alterations from the prevailing time occur especially in instrumental music, in variously grouped notes, the groups being not only of divisions according to compound or according to simple time, but also of an odd number of notes. In all these cases the figure corresponding to the numeral expressing the number of notes to be performed in an accommodated time within the pulse or portion of a pulse, is placed over or under the heads of the notes, and when the notes are quavers, or notes of less value, they are grouped by bands, as in the following examples.

Fig. 81. BEETHOVEN.

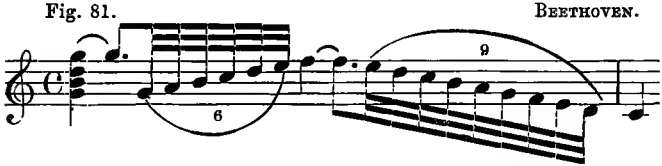
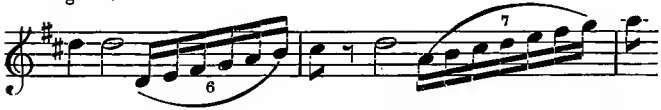


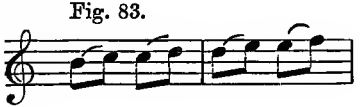
Fig. 82. MACKENZIE.



184. The notes in the last examples are not only grouped by bands but also by a curve, which character is called a SLUR. The slur is not absolutely necessary for the grouping, but is generally used when there are a number of notes, and it is often used in the ordinary triplet group when the notes are crotchets or minims.

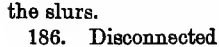
185. The principal use of the slur is to connect any two or more different sounds that are to be sung to one syllable, or that if performed by an instrument are to be played smoothly, with as little break between the notes as possible. In a passage with the notes slurred in couples thus

Fig. 83.

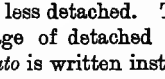


the second of the two notes that are slurred is played slightly shorter than the first. When a whole passage is to be performed in this smooth connected style the word *Legato* is used instead of the slurs.

186. Disconnected sounds are marked by a dash ' placed over the notes, thus  This is called STACCATO. Thus marked the sounds are to be performed in a very sharp and detached style. Dots are used instead of dashes, thus  when the notes are to be less detached. This is called SEMI-STACCATO. When a whole passage of detached sounds occurs the word *Staccato* or *Semi-staccato* is written instead of the dashes or dots over each note.

187. Another variety of staccato is used in instrumental music, in which the sounds are very slightly detached. This is shewn by dots over or under the notes, grouped by a slur, thus  In instruments of the violin class, where such passages mostly occur, the grouped notes are taken with one stroke of the bow.

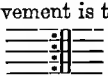
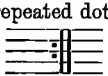
188. An effect the opposite of the staccato is sometimes required in which each note is to be sustained to its full time, and this sign – or this, which indicates an accent in addition, ˗ is placed over the note, thus  or When a whole passage is to be performed with each note of it sustained to its full value, the term *Sostenuto* is written instead of the sign – over each note.

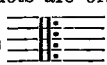
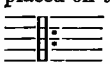
189. A sound or a silence is arbitrarily prolonged to an indefinite time by placing over the note or rest this sign 𝄐, called a PAUSE, thus  Occasionally the pause is placed over a bar or even between two notes when there is no rest to initial the silence that is required. When the pause is to be very long the word *lunga* is written over it, or *lunga pausa*.

190. To indicate exactly the speed at which a musical composition, or any main division or movement of it, is to be performed, reference is made at the beginning to an instrument called a Metronome, first invented by Mälzel. This is an instrument on the principle of a clock, having a swinging pendulum with a movable regulator, or simply a swinging pendulum with an adjustable weight to shorten or lengthen the pendulum, and so quicken or

slacken the rate of its swing. The pendulum is marked in various divisions by figures, and moves or swings as many times in a minute as the regulator is set to. Thus if set at 60 it will swing once every second of time. If the music is to move at the rate of a second of time for the pulse it would be marked thus M M ♩=60. The M M stands for Mälzel's Metronome, but these letters are often omitted. The pulse in compound time being represented by a dotted note the metronome rate is expressed thus 𝅗𝅥. = 60, or ♩. = 60, unless a slow rate is required, when the rate for the note representing the triplet subdivision of the pulse would be given as the crotchet or quaver in the cases just instanced. The higher the figure at which the pendulum is set the quicker the rate, and the lower the figure the slower the rate. It will be found that ♩= 80 represents a pulse to three-quarters of a second of time, and ♩= 40 a pulse to a second and a half of time.

191. Before the invention of the metronome the pace could only be indicated in a general way by words such as those given in the list in § 221. These words indicate the style as much as the pace of the music, and an entire composition or the divisions of long compositions, as the sonata and symphony, into separate movements are often designated by such terms as *Andante*, *Adagio*, *Largo*, *&c.*

192. If a movement is to be repeated dots are placed before the double bar thus  or  which shew that the music is to be repeated from the beginning, or from a previous double bar if one has occurred.

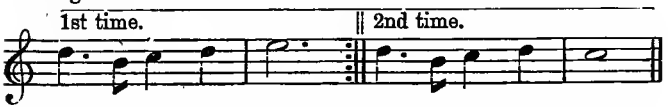
193. To mark more clearly the place from which the repetition begins dots are often placed on the right of the previous double bar thus  or 

194. Repetitions are also expressed by the words D.C. or *Da Capo*, which means repeat from the beginning; or by D.S., *Dal Segno*, which means repeat from the sign; the sign being written thus 𝄋. Sometimes the repetition, though practically from the beginning, is not from the first note. In this case the 𝄋 marks the exact place and the words *Da Capo al Segno* are used for the repetition. After a repeat the conclusion is shewn by the word FINE, or by a pause over the double bar 𝄐.

195. Sometimes in the repetition of a movement the conclusion varies somewhat, in time or in tune, or in both, from the first

version of the movement. In such a case the altered conclusion is written after the other, and the two phrases are bracketed and marked 1st time and 2nd time, thus

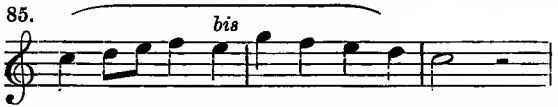
Fig. 84.



The phrase marked 1st time is omitted in the repetition and that marked 2nd time is substituted.

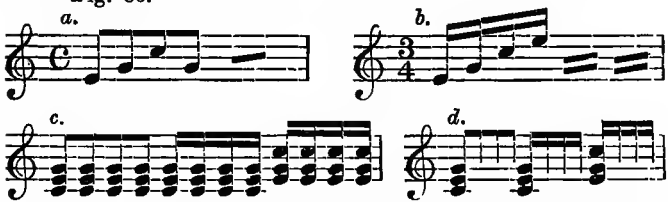
196. When a short passage is to be repeated it is sometimes marked by writing the word *bis* (twice) over the notes embraced in the passage, thus

Fig. 85.



197. The repetition of a group of notes is indicated by this sign  or according as the group consists of quavers or semiquavers, as at *a b*, and in manuscript writing chordal groups such as at *c* are often abbreviated as at *d*.

Fig. 86.



198. The repetition of all that is included in the preceding measure is also indicated in a similar way by  or  or  , thus

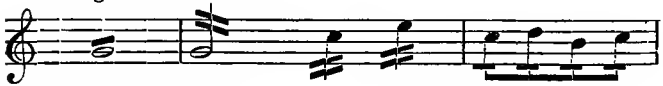
Fig. 87.

The word *simile* is sometimes added in such cases.

199. Successive repetitions of one sound, especially in rapid iterations, are often expressed by writing a note of the collective value of the repetitions, as a semibreve, minim, or quaver, and drawing one or more strokes under or over the note, or through the

stems of it; one stroke signifying a division into quavers, two strokes semiquavers, and so on, thus

Fig. 88. Written.



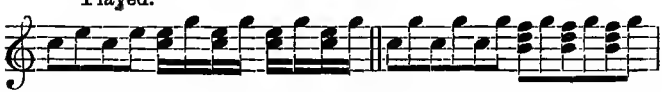
Played.

200. Successive alternations of sounds are similarly abbreviated by writing minims and uniting the stems with one or more bands, according as the divisions are to be in quavers or semiquavers, &c., as at *a b*. Similar alternations of sounds where the notes are of the value of semiquavers or less are expressed by uniting the stems with one band, and writing an additional stroke or strokes between the stems in the manner shown at *c d*.

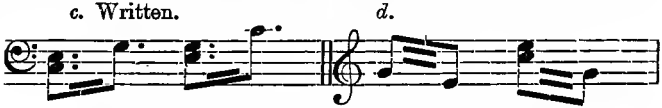
Fig. 89. Written.

a. *b.*

Played.



c. Written. *d.*



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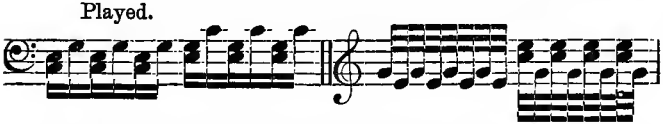


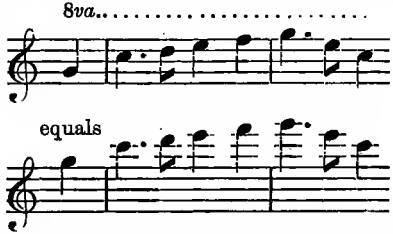
201. Very rapid iteration of sounds or alternations of sounds are indicated in a similar manner by uniting the stems of the notes with two or three bands, and writing the word *tremolo* or *tremolando* over the passage.

CHAPTER XII.

TUNE MODIFICATIONS.

202. To save the use of a number of leger lines above the treble staff, and to facilitate reading, a passage is often written within the ordinary range of the stave an octave lower than it is intended to be played, and 8*va* with dashes or dots placed over the passage, thus

Fig. 90.



203. *Con* 8*va* or 8*ves* placed over a passage means that the notes as written are to be played with octaves above.

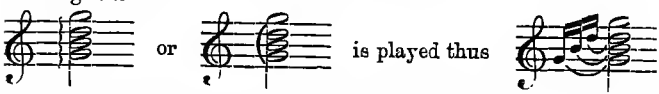
204. *Ottava bassa* or 8*va bassa* placed under a passage on the bass staff means that it is to be played an octave lower than written. Occasionally an 8 is written under a single note in the bass staff  which means that the note an octave below is also to be played with the written note.

205. *Loco* (in place) is a term used after an octave passage written in the convenient forms just described, to shew more clearly where the pitch of the notes as written is resumed.

206. Combinations of sounds instead of being played absolutely together are sometimes played successively, as on a harp. This

effect is called and expressed by writing the word *arpeggio* or *arpeggiando* over the several combinations, or by these signs } (placed at the left hand side of the notes, thus—

Fig. 91.

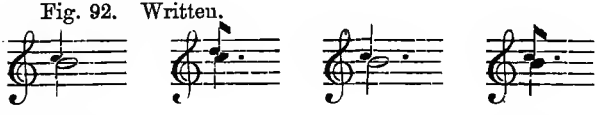


Sometimes the *arpeggio* notes are written in this last fashion instead of in the abbreviated form with the *arpeggio* sign.

207. The notes written in small type in the last example are also occasionally used without ties, the principal notes being restruck after the *arpeggio*. Used in this way the small notes come under the general term of *Grace Notes*, of which there are several kinds that may be now described.

208. The *Appoggiatura* is a note that is placed before another as an auxiliary to a principal note, and is usually a degree above or below the principal note. It is written smaller than the principal note from which it takes its time. The appoggiatura is sometimes long and sometimes short. If long it usually takes half the time of the principal note, unless this is a dotted note, when it usually takes two-thirds, thus—

Fig. 92. Written.



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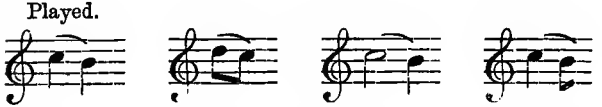
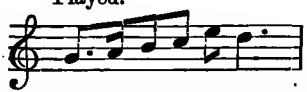


But in modern music this long form of the appoggiatura is seldom used, the notes being written in full. The short form of the appoggiatura is written in a note of shorter value than the half of the principal note, and takes just the time represented by the value, thus—

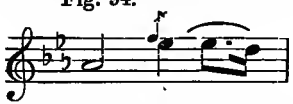
Fig. 93. Written.

Played.



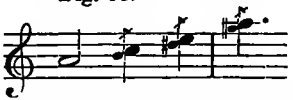
209. The *Acciaccatura* is a shorter form of the appoggiatura than the last, taking the smallest possible time from the principal note and is written as a quaver with a dash through the stem. thus—

Fig. 94.



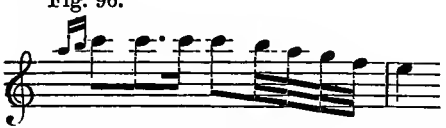
210. The *Beat* is a term applied to a short appoggiatura or to an acciaccatura that is a semitone below the principal note as—

Fig. 95.



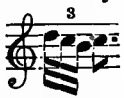
211. Two or three notes written in small characters sometimes precede a principal note, termed by some writers a *compound appoggiatura*. Thus—

Fig. 96.



The time for these extra notes is usually taken from the pulse or division that precedes the principal note.

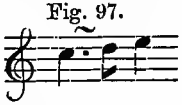
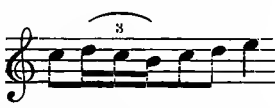
212. The *Turn* is an ornament that embraces an upper auxiliary note to a principal note and a lower auxiliary note. There are two distinct forms of the Turn. In the Direct Turn, which has this

sign ∼ written over the note, the upper auxiliary note comes first, the principal note next, then the lower auxiliary note, followed by the principal note again. Written thus  played 

213. In the *Inverted Turn* which has this sign ≀ written over the note, the lower auxiliary note comes first, the principal note next, then the upper auxiliary note, followed by the principal note again. Written thus  played 

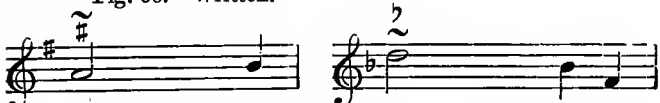
214. The time of the ornament varies with the length of the principal note and the rate of the movement. The ornament is sometimes at the beginning of the principal note, as in the foregoing examples, and sometimes at the end, as in the examples of Fig. 98, and sometimes, as in the following case of a dotted note, midway between the beginning and the end. In the turn over a dotted note in simple time the last note of the ornament is usually made the length of the dot, thus—

Fig. 97.

Written  Played 

215. Usually the upper auxiliary note of the turn is a tone above the principal note and the lower auxiliary note a semitone below the principal note, unless the upper note is in the scale only a semitone above the principal note, when the lower auxiliary is then commonly left a whole tone below. Sometimes the exact nature of the ornament is indicated by placing an accidental above or below the turn.

Fig. 98. Written.



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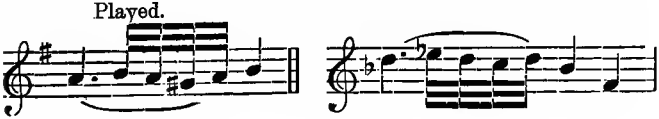
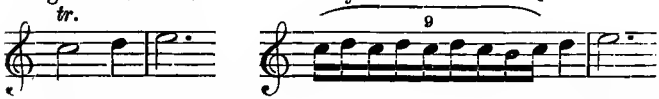
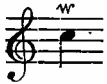
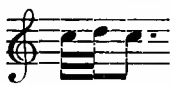


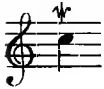
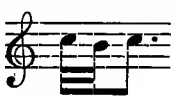
216. The *Shake* or *Trill*, written *tr*, is the rapid alternation of a (principal) note with the note above. Usually the principal note comes first, and before the last recurrence of the principal note a note below is taken, making a turn for the finish, thus—

Fig. 99. Written. Played.



If the shake is to be made with any other note above the principal note than that indicated by a signature, a ♯, ♭, or ♮ is placed above the *tr*, as in the case of the alteration mentioned for the turn.

217. The *Mordent*, written 𝆖, is like a single shake or trill, the principal note and the note above being taken very rapidly, followed by the principal note again, which occupies the greater portion of the time, written thus  played 

218. In the *Inverted Mordent*, written 𝆗, the note alternated with the principal note is a note below it, written thus  played 

CHAPTER XIII.

EXPRESSION.

219. The modifications of time and tune described in the previous chapters serve more or less to give in particular instances some expression to the music. But Expression in the full sense of the term comprehends not only many other modifications of time and tune of a general character that are effected by the use of technical terms, but also modifications of the intensity of sounds. By all these means light and shade are imparted to the musical picture that promote characteristic effects.

220. Different degrees of intensity are indicated by the following words from the Italian language or their abbreviations or signs—

Piano or *p*.....Soft.
Forte or *f* .....Loud.
Mezzoforte or *mf* .....Half loud.
Mezzopiano or *mp* .....Half soft.
Fortissimo or *ff* .....Very loud.
Pianissimo or *pp* .....Very soft.
Crescendo, cres. or  .....Increasing.
Decrescendo, decres., *Diminuendo, dim.*, or  .....Decreasing. Diminishing.
Sforzando, sf, > or ∧ .....Forcing.
Forzato, fz. / *Sforzato, sf* .....Forced. / Accented.
Rinforzando, rf, or *Rinf.*.....Reinforcing.
Morendo .....Dying away.
Perdendosi .....Losing itself.
Dolce.....Soft.
Forte piano or *fp* .....Loud, then soft.

221. Different degrees of movement or pace are indicated by the following words from the Italian language. Those first named mostly apply to the whole composition, as said in § 191, but sometimes they affect only a short phrase or section of the music. In the progressive order that represents the slowest speed first, the terms are as follows—

Grave.....Grave, heavy.
Adagissimo....Very leisurely, slower than *Adagio*.
Adagio.....Slow, leisurely.
Largo.....Large, grand, broad, slow.
Lento..... Slow.
Larghetto.....Diminutive of *Largo*, not so slow as *Largo*.
Andante.....Going at a moderate pace.
Andantino.....Diminutive of *Andante*, going gently, not so slow as *Andante*.
Moderato.....At a moderate pace.
Allegro.....Merry, lively.
Allegretto.....Rather merry, not so fast as *Allegro*.
Presto.....Quick.
Prestissimo....Very quick.

222. Other terms modifying or affecting the rate of movement are as follows:—

Increasing the speed.

Accelerando.....Accelerated.
Stringendo.....Pressing onwards.

Decreasing the speed.

Allargando.....Enlarging.
Calando.....Decreasing.
Lentando.....With increased slowness.
Rallentando.....Becoming slower.
Ritenuto, riten., rit.....Holding back the time.
Ritardando, ritard, rit....Retarding the time.
Slentando.....A gradual diminution of the time.

A tempo, *Tempo primo* or *Tempo Come prima*..... } All used after some alteration of the time has been made, to show a return to the first or previous rate of movement.

A piacere, *Ad libitum*..... } At pleasure.

L'istesso tempo.....In the same time; *i.e.*, the beats to be the same, whatever be the *forms* of the notes.

Tempo comodo .....In convenient time.
Tempo giusto .....In exact time.
Tempo ordinario .....In ordinary time.

223. The following are some of the terms used to indicate manner and style, &c.

Affettuoso, or *Affetuosamente*..Affectionately, or with feeling.
Agilita .....With lightness.
Agitato .....Agitated.
Amoroso .....Lovingly.
Animato, Animando .....Animated, animating.
Appassionato, Con passione ..Passionately, with passion.
Assai .....Sufficiently, very.
Ben .....Well, *e.g.*, *Ben marcato.*
Brillante .....Brilliant.
Cantabile .....In a singing style.
Col canto .....With the singing part.
Colla parte .....With the solo part.
Colla voce.....With the voice part.
Commodo .....Easy, without haste.
Con anima .....With soul.
Con brio .....With vigour, with spirit and full tone.
Con energia.....With energy.
Con espressione .....With expression.
Con forza.....With force.
Con fuoco.....With fire.
Con moto .....With motion, with animated movement.
Con spirito .....With spirit.
Con tenerezza .....With tenderness.
Dolce .....With softness and delicacy.
Dolente.....In a plaintive style.
Espressivo, ...Expressive, with expression.
Grazioso, con grazia .....Graceful, with grace.
Legato .....Bound, in a smooth style.
Leggiero .....Light.
Ma .....But; as *Ma non rall.*
Maestoso, Con maestâ .....Majestic, with majesty.
Marcato .....Marked, marking.
Mesto, Con dolore .....Sadly.
Meno .....Less, as *meno vivo*, less lively.
Mezzo .....Half.

Molto ..... Much, very.
Non tanto ..... Not so much.
Non troppo ..... Not too much.
Parlante ..... In a style of recitation.
Pesante ..... Heavy.
Più ..... More; as *Più animato*, more animated.
Poco ..... Little.
Poco a poco ..... By degrees.
Pomposo ..... Pompous.
Quasi ..... Almost, as though.
Recitativo ..... Recitative, *i.e.*, the delivery of the words as in a recitation, to musical phrases, with great freedom as to time.
Risoluto ..... Resolute.
Scherzando ..... Playing (playful).
Segue ..... It follows.
Sempre ..... Always; as *sempre pp.*
Smorzando ..... Fading away.
Soave ..... Delicately, gently.
Sostenuto ..... Sustained.
Tenuto ..... Held, sustained.
Tranquillo ..... Tranquil.
Vivace ..... Lively, brisk.
Vivo ..... Lively.
Volti ..... Turn.
Volti subito or *v. s.* ..... Turn quickly.

CHAPTER XIV.

MISCELLANEOUS.

Concerning Voices, Scores, and Points of Writing.

224. Music written for a single voice or instrument is termed a *Solo*, for two voices or instruments a *Duo* or *Duet*, for three voices or instruments a *Trio*, for four voices or instruments a *Quartet*, for five a *Quintet*, for six a *Sestet*, for seven a *Septet*, for eight an *Ottetto*. Music written for a mass of voices is called *Choral Music*.

225. In music that is written to be performed, some portions by single voices to a part and some portions by a number of voices to a part, the words *Soli* (plural of Solo) and *Chorus* are respectively employed. The word *Tutti* is also employed instead of Chorus. Sometimes there are portions for performance by a select number of voices to a part, when the word *Semi-chorus* is used.

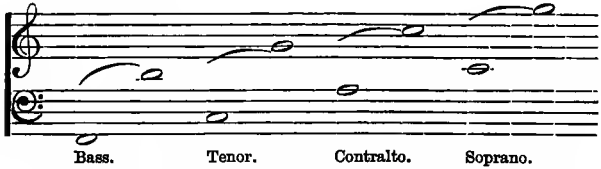
226. There are in full anthems portions corresponding to the semi-chorus in other compositions, that in cathedrals and churches are alternately taken by the two divisions of the choir that sit respectively on the side of the dean and the cantor. The words *Decani* and *Cantoris* are used in this case for the semi-chorus sections, and the word *Full* is used when the two divisions of the choir unite.

227. In vocal music the part for the higher voices of women and children is called the *Soprano* or *Treble*, that for the lower voices of women and children the *Contralto*, that for the higher voices of men the *Tenor*, and that for the lower voices of men the *Bass*.

228. Each of these parts is sometimes divided into first and second, as First and Second Soprano, First and Second Tenor, &c.

229. The ordinary compass of the various voices for choral music is as follows—

Fig. 100.



The extreme notes are used sparingly. But in Soli music these are often exceeded.

230. Music written for performance by men and women is said to be for *mixed voices*, that for performance by men only, or by women only for *equal voices*.

231. The group of staves which represent the whole of the parts of a composition is called a *Score*. According to the manner in which the different parts are represented the term is qualified as follows.

232. A *Full score* gives the parts for each instrument and each vocal part, if any, mostly on separate staves.

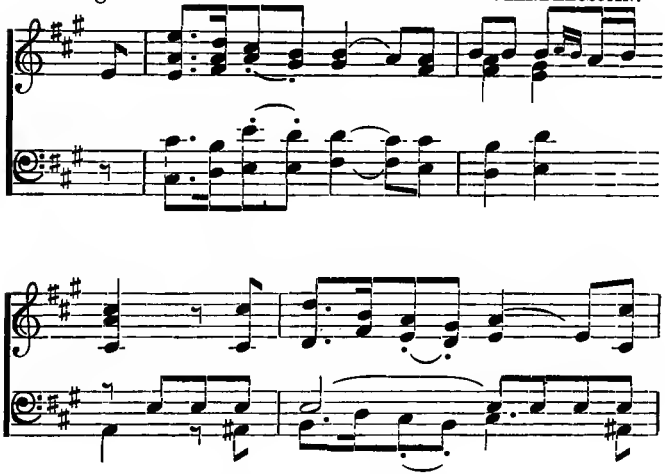
233. A *Vocal score* gives each voice part on a separate staff. The treble staff is used not only for the soprano part but for the contralto. The treble staff is also fast superseding the tenor staff for the tenor part, notwithstanding that the treble staff represents the pitch at an octave higher than the natural pitch of the tenor voice. But this difference in the octave is not found to be of any practical inconvenience to the singer.

234. A *Short score* is a vocal score condensed into two staves, the soprano and contralto parts being written on the treble staff, and the tenor and bass parts on the bass staff. The stems of the notes for the higher parts in each staff, viz., of the soprano and tenor, are turned *up*, and those of the notes for the lower parts in each staff, viz., of the contralto and bass, are turned *down*. Fig. 62 is a specimen of short score.

235. A *Pianoforte score* condenses also the whole of the music into two staves, all the notes to be played by the right hand being written as one part on the treble staff, and all the notes to be played by the left hand as one part on the bass staff. In this score all the notes in each staff have the stems of the note in one direction,

up or down as may be convenient, except when some of the notes are longer or shorter than the others, when the stems are turned in opposite directions as in short score. The following is a specimen of pianoforte score—

Fig. 101. MENDELSSOHN.



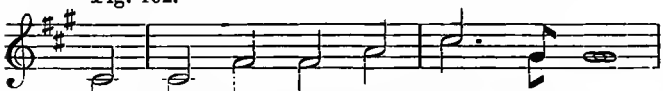
236. A score for the *Harmonium* or for *Organ* without pedals is in the same form as a pianoforte score. The vocal score usually includes a score for one of these instruments.

237. All the staves forming a score are grouped on the left hand side by a brace or accolade. The score for the accompanying instrument, piano, harmonium, or organ, usually has a brace to itself. See examples of each in Fig. 67. The bars in the score for the instrument are often, as in most instrumental scores, carried through the score from one staff to another.

238. All notes that are to be sounded simultaneously are placed exactly over each other. See the example of Fig. 101, where in the last two measures longer notes are opposed to shorter ones and rests occur.

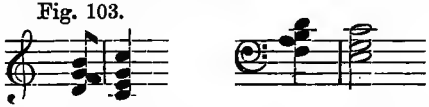
239. When in short score two parts are in unison it is shewn by the stems being turned up on the right hand side for the upper part and down on the left hand side for the lower part. In the case of a semibreve a double note is written, one interlacing the other, as in the following example, or two notes are placed side by side as close as possible.

Fig. 102.



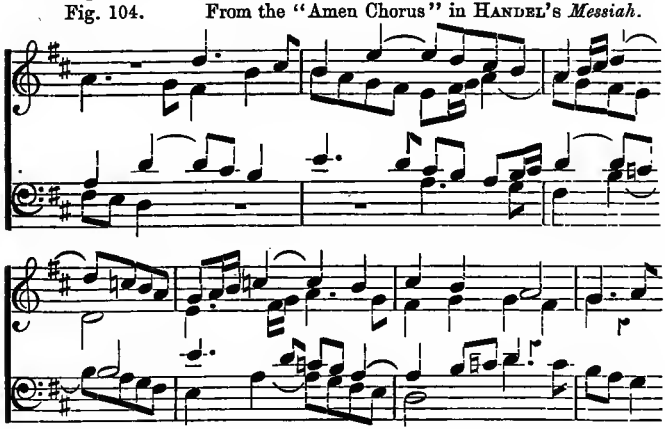
240. In a combination of notes that includes two next each other in the scale one of these is placed outside the others on the same side as the stem is turned, thus—

Fig. 103.



241. When in short score two parts, or in pianoforte score two melodies on one staff, come upon unison or upon notes next each other in the scale with notes of different value, the note of shorter value is placed first. See the B's in the third measure in the bass staff and the G and A in the fifth measure in the treble staff of the following.

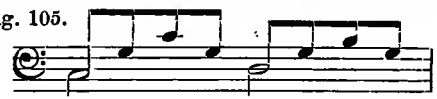
Fig. 104. From the "Amen Chorus" in HANDEL'S *Messiah*.



242. When two parts come upon a unison and one is a crotchet and the other is any note of the quaver family, one head serves for the two notes. See the B's in the second measure and the A's in the third measure of the treble staff in the foregoing example.

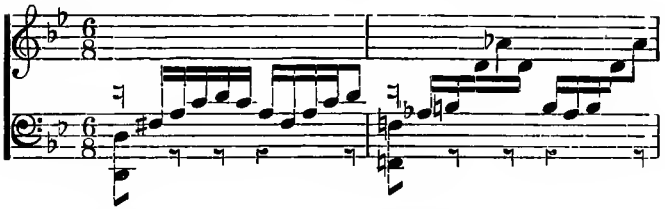
243. A minim head also serves for the head of a quaver in another part in such a figure of accompaniment as the following—

Fig. 105.



244. In pianoforte score the right hand part when ranging much below the treble staff is often written, to save leger lines, on the bass staff with the stems of the notes turned up, or partly on one staff, partly on the other, as in the following example.

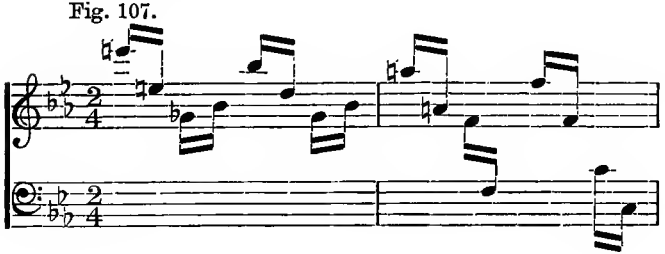
Fig. 106. MENDELSSOHN.



The absence of rests in the treble staff helps to draw attention to the fact that the right hand part is to be found in the bass staff.

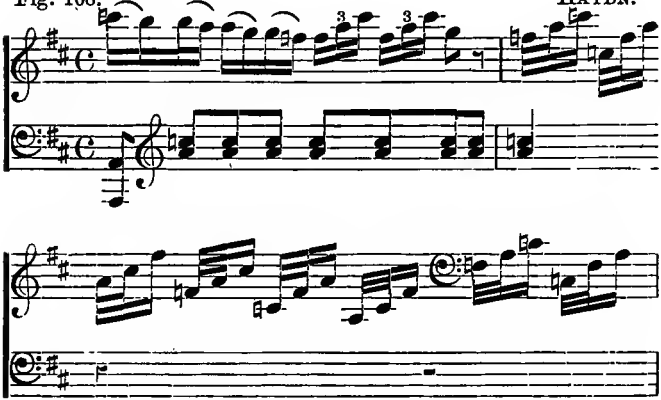
245. Similarly when the left hand part ranges much above the bass staff it is written on the treble staff with the stems of the notes turned down, thus—

Fig. 107.



246. Another method of expressing passages that overlap the range of the staff is to change the clef for the nonce, *i.e.*, to use the bass clef for the right hand part or the treble clef for the left hand part, as in the following example—

Fig. 108. HAYDN.



It may be noticed in these cases that there is no occasion to give the key signature with the altered clef.

247. The prevailing key signature is repeated at the beginning of each score, but the time signature is indicated only at the beginning or when the measure is changed.

248. When a change of time signature (§ 101) or of key signature (§ 160) is impending at the commencement of a line it is customary to give warning of it by giving the new signature at the end of the previous line, after a double bar.

249. A change of clef occurring at the commencement of a line is similarly indicated in advance at the end of the previous line.

250. At the end of a line or at the bottom of a page this sign ☞, called a *direct*, is sometimes used to indicate the note that is following in the next line.

251. *Transposition* is a term that is used to express the exact reproduction of a passage at a higher or a lower pitch. The term is also used to express a change of a passage from one staff to another at the same pitch.

CHAPTER XV.

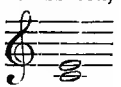
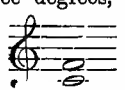
INTERVALS.

252. The subject of intervals is a connecting link between melody and harmony (§ 11). Intervals have already been referred to, though not designated as such, when treating of successive sounds. But to obtain even a rudimentary knowledge of the rules that govern the art of combining sounds to make harmony it is necessary to have a clear understanding of all possible intervals.

253. The distance between any two sounds is called an INTERVAL.

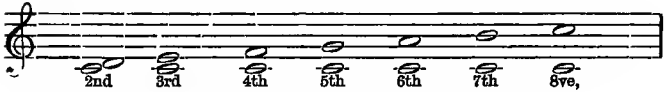
254. The scale consists of a series of intervals, but, as said in § 15, the distances between the sounds are not all equal. The distance between any one sound and its immediate neighbour is broadly termed a *degree* or *step*.

255. The differences between the larger and smaller steps of the scale have already (§ 15) been described as Tone and Semitone. The Tone and Semitone are also among intervals termed *Seconds*, two degrees being embraced. The larger interval or Tone, as D E, is called a major second, and the smaller or Semitone, as E F, a minor second.

256. The intervals of sounds a wider distance apart are named in a similar manner, according to the number of degrees embraced, counting the first and the last. Thus the sounds C E  embrace three degrees, and the interval is called a **Third**; the sounds C F  embrace four degrees, and the interval is called a **Fourth**, and so on.

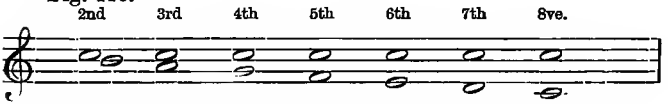
257. There are as many different intervals within the scale as there are degrees. This is shewn by the following table, starting from the first of the scale of C.

Fig. 109.



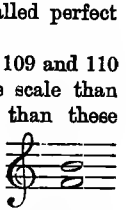
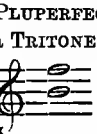
258. In the following table, starting from C above—

Fig. 110.



a similar set of intervals is produced, but some of them are smaller than the corresponding intervals in the previous table; in technical language, a change of *quality* has taken place. Thus the 3rd, 6th and 7th are each less by a semitone than they are in the table of Fig. 109. These smaller varieties are all termed minor, and the others are termed major.

259. The 4th, 5th, and 8ve are the same in each of the tables; no change of quality has taken place. These are all called perfect intervals.

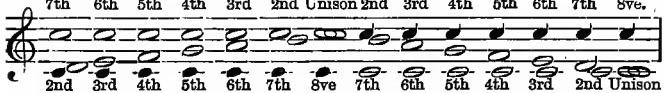
260. A similar series of intervals to those in Figs. 109 and 110 can be produced starting with any other note of the scale than the first, and no other changes of quality result than these two. The 4th from F upward (or from B downward)  contains a semitone more than any other 4th, and it is termed a PLUPERFECT FOURTH, or, from its containing three whole tones, a TRITONE FOURTH.* The 5th from B upwards (or from F downwards)  contains a semitone less than any other 5th, and it is termed an IMPERFECT FIFTH.

261. The imperfect fifth and tritone fourth are found only once in the same major scale, but twice in a minor scale in its harmonic form.

* This latter term is preferable alike to Pluperfect, which is anomalous, and to Augmented (as some writers describe it), which properly describes a chromatic interval.

262. Every interval may be converted from one kind to another by raising the lower sound an octave, or *vice versa* by lowering the upper sound an octave. This is termed INVERSION. The following shews both processes applied to the tables of Figs. 109 and 110. The black notes are those from which the intervals were there reckoned.

Fig. 111.



263. The change (of kind) that will be produced by the inversion of an interval may be ascertained by subtracting from 9 the number of the interval to be inverted. Thus $9 - 5 = 4$, a 5th becomes a 4th; $9 - 3 = 6$, a 3rd becomes a 6th.

264. A change of quality also occurs by inversion, *i.e.*, major intervals become minor intervals, and *vice versa*, and the imperfect fifth becomes a pluperfect fourth and *vice versa*. But the perfect intervals remain unchanged in quality. It will be seen that the inversion of the octave produces unison. This is an interval only in name.

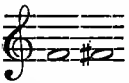
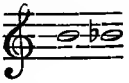
265. Intervals within an octave are called SIMPLE INTERVALS. Those that exceed the octave are called COMPOUND INTERVALS.

266. Generally an interval is named after its simple form even if it be extended by one or more octaves. But a 9th (which is really a 2nd with an 8ve added to it) is usually so named, after its compound form.

267. The designation of any compound form of a simple interval may be found by adding the number 7 to the number of the simple interval for each octave. Thus a 3rd with one octave added to it becomes $(3 + 7 =)$ a 10th; an 8ve with an 8ve added to it becomes $(8 + 7 =)$ a 15th.

268. All intervals formed by any two notes of the same major scale are termed DIATONIC INTERVALS.

269. The semitones found in a diatonic major scale between the third and fourth and seventh and eighth, and in a diatonic minor scale between the second and third and seventh and eighth, are termed DIATONIC SEMITONES. But a semitone produced as in the chromatic scale by raising the pitch of a sound by a sharp (or its

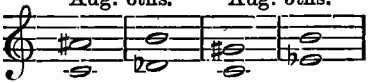
equivalent) thus  or lowering it by a flat (or its equivalent) thus 

is called a CHROMATIC SEMITONE.

270. A diatonic interval increased or lessened by a chromatic semitone produces a CHROMATIC INTERVAL, except in the increase of a perfect fourth and the decrease of a perfect fifth, as shown in § 274.

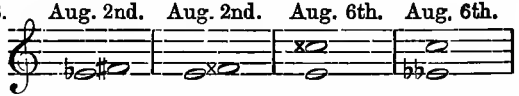
271. A major interval or a perfect fifth increased by a semitone is called an AUGMENTED INTERVAL. Such an interval may be produced by raising the pitch of the upper note or lowering the pitch of the lower note of the major or perfect interval. Thus—

Fig. 112. Aug. 6ths. Aug. 5ths.



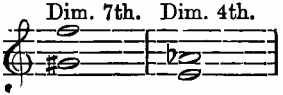
Or an augmented interval may be produced from a minor interval by raising the upper note and depressing the lower note each a semitone, or, by what is equivalent, raising the upper note a whole tone or depressing the lower a whole tone. Thus—

Fig. 113. Aug. 2nd. Aug. 2nd. Aug. 6th. Aug. 6th.



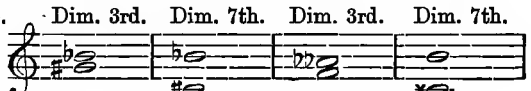
272. A minor interval or a perfect fourth decreased by a semitone is called a DIMINISHED INTERVAL. Such an interval may be produced by lowering the pitch of the upper note or raising the pitch of the lower note of the minor or perfect interval. Thus—

Fig. 114. Dim. 7th. Dim. 4th.



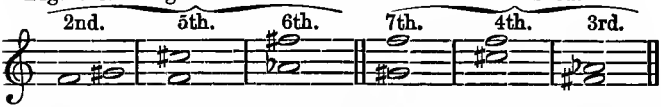
Or a diminished interval may be produced from a major interval by depressing the upper note and raising the lower note each a semitone, or, by what is equivalent, depressing the upper note a whole tone or raising the lower note a whole tone. Thus—

Fig. 115. Dim. 3rd. Dim. 7th. Dim. 3rd. Dim. 7th.

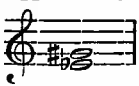


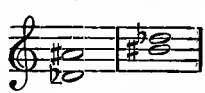
273. The intervals which may be augmented are the 2nd, 5th, and 6th, and those which may be diminished the inversions of these, viz., the 7th, 4th, and 3rd, thus—

Fig. 116. Augmented. Diminished.

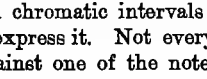


It will be seen that chromatic intervals, like the diatonic intervals, change their quality by inversion; augmented become diminished, and *vice versa*. Some writers treat all intervals as alike subject to augmentation and diminution. But only the augmented and diminished intervals already named have any real existence in music. Others appear only in enharmonic transitions; thus an augmented 3rd is written as the enharmonic equivalent of a perfect 4th. Doubly augmented and doubly diminished intervals, as may, too, appear on paper, but the doubly augmented 5th and doubly diminished 3rd are false representations of a major 6th and minor 2nd respectively.

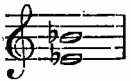


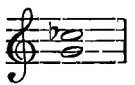


274. In all chromatic intervals one of the sounds will need an accidental to express it. Not every interval, however, that has an accidental against one of the notes representing it is a chromatic interval. Thus the following are both diatonic intervals, being imperfect fifth and tritone fourth in the scales of A and B♮ respectively.



275. To ascertain the nearest key to which an interval belongs that has an accidental against one or both its notes, and so to determine whether it is a diatonic or chromatic interval, it is only necessary to seek out or think of the first key signature which has such a sharp or flat in it, as the case may be. Thus in the following interval the first signature with a D♯ in it is that of the key of E. The interval, must at least, therefore, belong to what may be termed as sharp a key as that. Both notes of the interval are seen to be scale notes, and the interval may be reckoned as the major 6th on the second of that scale, though it may also be taken as being on the fifth of the scale of B, or as on the first of the scale of F♯, or as on the fourth of the scale of C♯. Again in the

following interval  the first signature with an E♭ is that of the key of B♭. The interval must, therefore, belong to what may be termed as flat a key as that, and the interval may be reckoned as the perfect 5th on the fourth of that scale, though it may also be taken as being on the fifth of the scale of A♭, or on the second of the scale of D♭, or on the sixth of the scale of G♭, or on the third of the scale of C♭.

276. In all cases the *kind* of interval is preserved in its appearance as to the number of degrees it occupies on the staff. It may be seen, for instance, that a diminished 4th as  is in distance between the sounds practically the same as a major 3rd,  But one must not be written for the other.

277. Another method of testing whether an interval is diatonic or chromatic, which may be resorted to in cases of doubt, is to reckon up the number of semitones contained in the interval. The following tables give the number of semitones in each diatonic interval and in each chromatic interval, and shew the diatonic and chromatic intervals that are equal in the number of their semitones.

Diatonic Intervals.				Chromatic Intervals.		
Minor 2nd	contains	1	semitone.			
Major 2nd	,,	2	semitones.	Diminished 3rd,	2	semitones.
Minor 3rd	,,	3	,,	Augmented 2nd,	3	,,
Major 3rd	,,	4	,,	Diminished 4th,	4	,,
Perfect 4th	,,	5	,,			
Tritone 4th	,,	6	,,			
Imperfect 5th	,,	6	,,			
Perfect 5th	,,	7	,,			
Minor 6th	,,	8	,,	Augmented 5th,	8	,,
Major 6th	,,	9	,,	Diminished 7th,	9	,,
Minor 7th	,,	10	,,	Augmented 6th,	10	
Major 7th	,,	11	,.			
Octave	,,	12	,,			

CHAPTER XVI.

THE ELEMENTS OF HARMONY.

278. Intervals for harmony purposes are further divided into two classes—consonant and dissonant. The former class is also subdivided into perfect and imperfect consonances. The 4th, 5th, and 8ve are termed perfect consonances, and the 3rd and 6th are termed imperfect consonances.

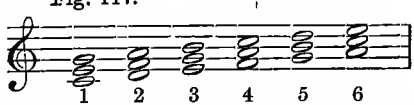
279. The 2nd, 7th, imperfect 5th, pluperfect 4th, and all chromatic intervals are included among dissonances.

280. The primary elément in harmony is a combination of consonant intervals. Such a combination is termed a CONCORD, in contradistinction to a combination of sounds that includes a dissonance, which is called a DISCORD.

281. The interval upon which modern harmony is founded is a third. When two thirds, one major and one minor, are placed one above another a perfect fifth is embraced, and the combination is termed a CHORD. It is also called by some writers a common chord, and by others, from its including three sounds, a TRIAD.

282. A chord can be raised upon each note of the major scale but the seventh—

Fig. 117.

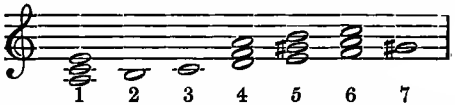


It will be seen that these are not all alike. Those on the first, fourth, and fifth of the scale have the first 3rd major, and these chords are called major chords. Those on the second, third, and sixth of the scale have the first 3rd minor, and these chords are called minor chords.

283. Isolated chords may be named after the pitch note on which they are raised, as the chord of C, or the chord of G, &c. But in an orderly succession of chords they are considered in relation to the scale in which they stand, and are named from the degree of the scale upon which they are raised. Thus the chord raised on the first of the scale is called the chord of the Tonic, the chord on the fifth of the scale the chord of the Dominant, and so on. See § 19 for the names of the notes of the scale.

284. The notes of the minor scale upon which chords can be raised are seen in the following—

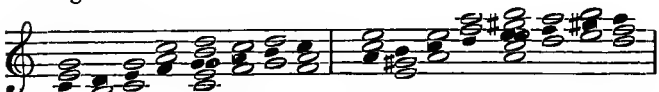
Fig. 118.



285. There are fewer chords in all than in the major scale, but half the number are major chords and half minor chords as before. A chord raised on the seventh degree of either scale, or on the second degree of the minor scale, would give an imperfect 5th, and a triad raised on the third degree of the minor scale would give an augmented 5th. Such combinations have no place among concords.

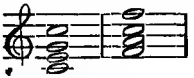
286. The chords that are most used in each scale are those of the tonic, dominant, and subdominant, and they are called the principal or foundation chords of the scale, comprising as they do all its separate degrees; see the following—

Fig. 119.



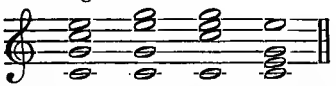
The Roman figure I stands for Tonic, V for Dominant, and IV for Subdominant.

287. The lowest note of a chord is called its ROOT, the next above, its THIRD; and the next above that its FIFTH. These are called the constituents of the chord. When an octave is added to

the root, as  the combination is sometimes called a complete chord.

288. All the chords in the foregoing examples are said to be in their root position. The upper notes may be variously placed, and either constituent may be doubled, as—

Fig. 120.

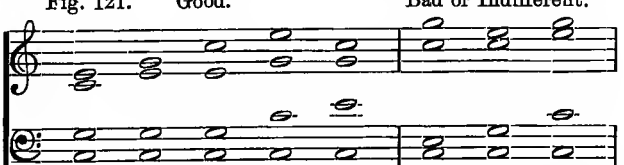


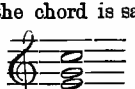
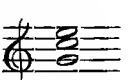
but the *position* of the chord as a whole is not thereby affected.

289. The constituent which is most freely doubled is the root, and next to that the fifth. The third is less freely doubled than either of the other constituents. The fifth may be omitted, but not the third. The way in which a chord is made up, with doubled root, or with doubled fifth, &c., is called the CONSTITUTION of a chord.

290. The order in which the upper notes of a chord are placed, as in the previous example, affects what is termed the DISTRIBUTION of a chord. That distribution is the best which gives the largest interval at the bottom and the upper intervals at more or less equal distances, thus—

Fig. 121. Good. Bad or Indifferent.



291. The chords can be so arranged as that either of the constituents shall stand lowest. When any other constituent than the root is placed lowest the chord is said to be inverted. If the third is placed lowest thus  the chord is said to be in its first inversion; if the fifth is placed lowest thus  the chord is said to be in its second inversion.

292. Chords are expressed by figures placed over or under the bass notes. A bass which shews the chords that are to accompany it is called a *Figured Bass*.

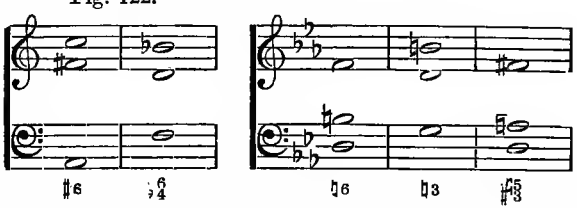
293. In the root position of a complete chord when the constituents stand in the normal order shewn in the examples of § 287, the intervals counting from the lowest are a 3rd, 5th, and 8th. The figures $\frac{8}{3}$ (*named* from the top downwards) are therefore used to express the root position of a chord. The figures, are, however, but seldom used for the root position, it being understood that a bass note unfigured is to bear a chord in its root position. When it is necessary to figure a root position, as when there are two chords on one bass note, 5 or 3 is generally sufficient.

294. In the first inversion of a chord when the constituents stand in their normal order, as shewn in the example in § 290, the intervals are a 3rd and 6th. The figures $\frac{6}{3}$ are, therefore, used to express the first inversion of a chord. This figuring is generally abbreviated to 6, and a first inversion of a chord is known as a chord of the sixth.

295. In a second inversion of a chord, when the constituents stand in their normal order, as shewn in the example in § 290. the intervals are a 4th and 6th. The figures $\frac{6}{4}$ are therefore used to express the second inversion of a chord, which is known as the six four position.

296. When any constituent is affected by an accidental the figure that represents the altered note is preceded by the corresponding accidental, thus—

Fig. 122.

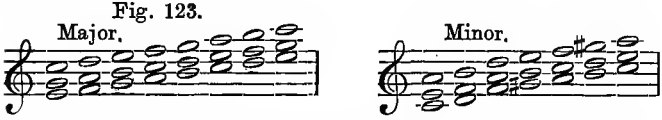


297. An altered third to the bass as in the last two cases of the previous example, is generally expressed by the accidental alone. Thus, under the G a ♮ would be sufficient, and under the D $\frac{\sharp 5}{3}$ would express the figuring. See further in § 314.

298. When the interval is raised a semitone, whether by a ♯ or ♮, it is sometimes expressed by a short oblique line drawn through the figure.

299. All the chords already named (§ 282 and § 284) are available in their first inversions. The first inversion of the imperfect chords standing on the seventh degree of both scales, and on the second degree of the minor scale, are also available as concords.

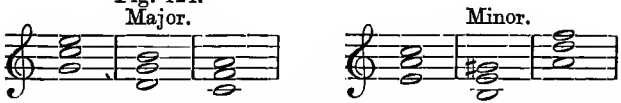
Fig. 123.



The minor scale, even in first inversions, has still one chord less. The first inversion of a triad on the third degree of the scale would still include a dissonance, *i.e.*, a diminished 4th.

300. The chords that can be used in their second inversions are those of the tonic, dominant, and subdominant only.

Fig. 124.



301. The first inversions are used with almost the same freedom as the root positions, but the second inversions are under many restrictions.

302. The rulee that govern the use of the second inversions and that regulate the succession of chords and the progression of the several constituents in joining chord to chord form the chief points for attention in the study of harmony. It is beyond the scope of this work to do more than briefly refer to the most important of these points.*

303. The chords in Fig. 119 though they have the scale running through them, are all more or less isolated from each other; they succeed in anything but a pleasant manner. Some of the successions have no element of union between them. Others have, such as

* A complete study of the subject may be made from the author's "Text Book of Harmony."

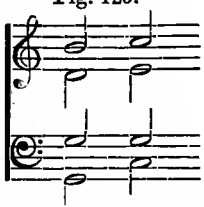
the succession of the chord of the tonic by the chord of the dominant, and *vice versa*, in the first two successions, where each chord has a note that is common to the other. The same is the case in the succession of the chord of the tonic by the chord of the subdominant (and *vice versa*). Those chords succeed each other best which have a note in common between them.

304. But the chords in Fig. 119 disagreeably succeed because as representing three different melodies or parts the upper and lower parts proceed all through in fifths. If an upper octave of the root were added to the chords, making four parts, the succession would scarcely be improved, the upper part would then move all through in octaves with the lowest part or bass, and the third part would move as before in fifths with the lowest part.

305. Consecutive fifths and consecutive octaves are prohibited between any two parts.

306. These intervals may, however, occur in two successive chords, so long as they are not between the same parts. Thus in the following case—

Fig. 125.



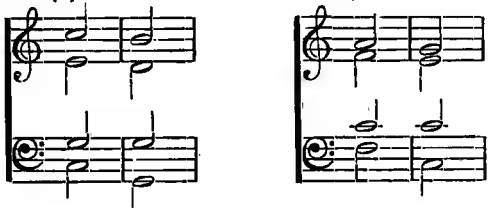
the octave in the first chord is between the base and the tenor parts, and in the second chord it is between the bass and soprano parts. The fifth in the first chord is between the tenor and contralto parts, and in the second chord it is between the bass and tenor parts. In each case the chord is complete, the "note in common" is retained in one part, and the other constituents of the first chord move to the nearest note of the second chord. This makes the smoothest connection of chord to chord which it is possible to have.

307. If a bar is put between the chords of the previous example so as to bring the last chord on an accent the form of a PERFECT CADENCE or close will be illustrated. This cadence is used for the final ending of a composition.

308. The leading note in the perfect close invariably rises to the tonic, as it generally does elsewhere.

309. Other cadences of a less conclusive kind for the closes of intermediate movements are the DOMINANT CADENCE, or half close (*a*), formed by reversing the tonic cadence, and the PLAGAL CADENCE (*b*), in which the tonic chord is preceded by the subdominant chord instead of the dominant.

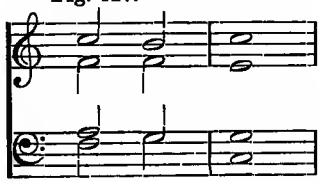
Fig. 126. (*a*) (*b*)



There are many other cadences, but the three named are the principal.

310. In the perfect cadence the fourth of the scale is often introduced in the dominant chord as a dissonant 7th to the root, converting the combination into what is termed the discord of the DOMINANT SEVENTH. This discord, from its containing both the fourth and the seventh of the scale better defines the key (§ 261) than the dominant concord. The discord also gives a note in common to the subdominant chord that often precedes the cadence chords.

Fig. 127.



The Dominant Seventh is therefore more often used in a perfect close than the plain concord, and in modern music this discord is as freely used as a concord in other places than the close.

311. The description of this discord and the mention of the chief rules that apply to its use must conclude this outline of the subject of harmony and the text of this work.

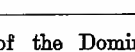
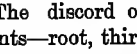
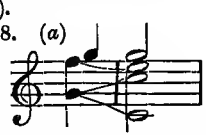
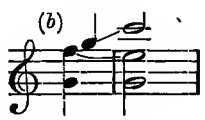
312. The discord of the Dominant Seventh comprises four constituents—root, third, fifth, and seventh—rising in the order of thirds from the lowest  If an octave is added to the root thus  there are two primary dissonances included, that of a minor 7th and that of a major 2nd. Every dissonance needs resolution on consonance. Both of these dissonances, together or separately, are resolved by the 7th moving down to the next note below; *i.e.*, to the 3rd of the tonic chord, the upper octave of the root as a 2nd keeping its place, and the root rising a 4th or falling a 5th to the root of the resolution chord (*a*), or if the root keeps its place the upper octave rising a fourth (*b*).

Fig. 128. (*a*)  (*b*) 

There is also included in the discord in its primary form a secondary dissonance of the imperfect 5th, or if the constituents be differently distributed, as in Fig. 129, a tritone 4th is included. These are resolved by the 7th of the chord making the same movement that has been already noticed—downward to the 3rd of the tonic, and by the leading note rising as it did in the concord to the key note or tonic.

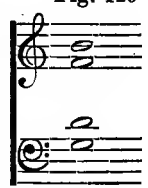
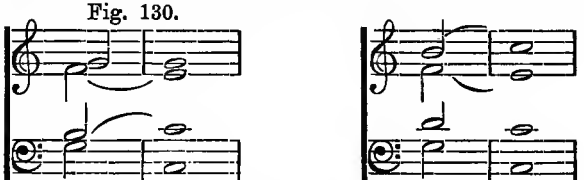
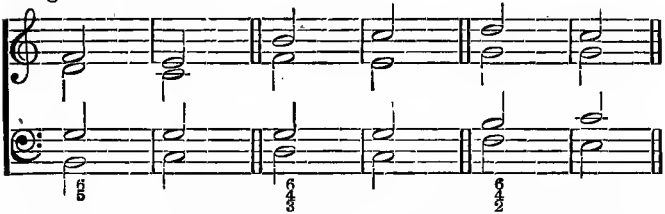
Fig. 129 

Fig. 130. 

This exhibits the regular resolution of the discord, and the progressions of its several constituents are generally the same in whatever position the discord may be placed. Nearly all dissonances need preparation; that is, the dissonant note has to be sounded as a consonant in the previous chord in the same part, as is done in the example of Fig. 127. But it is a feature of the dominant seventh that its dissonance needs no preparation.

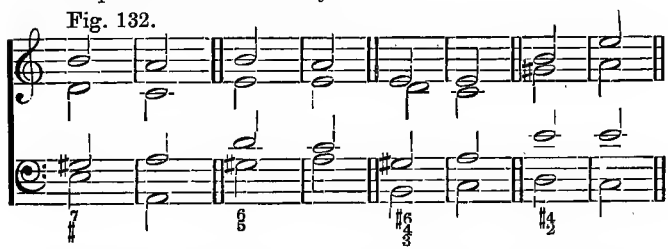
313. The Dominant Seventh may have any of its constituents in the lowest part, and the discord has therefore three inversions. These are shown in the following example, where the resolution is given in the major in each case, as also the full figurings of the discord in its several positions.

Fig. 131. 1st inv. 2nd inv. 3rd inv.



In the next example the Dominant Seventh is shown in all its positions, with the resolutions in the minor. The only difference is that the 7th descends now by a whole tone instead of by a semitone. The resolutions in Fig. 131 could be converted to minor by prefixing a ♭ to the E in each case, when the examples would be in C minor. Again the resolutions in the following illustration could be converted to major by prefixing a ♯ to the C in each case, when the examples would be in A major.

Fig. 132.



314. The full figuring of the root position of the Dominant Seventh is $\frac{8}{7}{}^{7}_{5}{}^{7}_{3}$ usually contracted to 7, but in the minor the accidental will be generally necessary for the altered 3rd or leading note, as seen in Fig. 132. The figuring of the second inversion is often abbreviated to $\frac{4}{3}$, and of the third inversion to $\frac{4}{2}$, especially in the major, but in the minor the 6 must be included in the second inversion because it is the (altered) leading note, and the 6 must be preceded by the necessary accidental, as shown in Fig. 132.

QUESTIONS AND EXERCISES.

CHAPTER I.

1. How is music produced?
2. Define sound and rhythm.
3. What is a musical sound?
4. Explain what is meant by pitch.
5. What else than the number of vibrations affects a sound, and what is the result.
6. What is chiefly implied by time? What by tune?

CHAPTER II.

7. In what two ways may sounds be grouped together, and what is produced in each case?
8. What is a scale?
9. Name any two sounds of the scale in numerical order which have a tone between them.
10. Between what sounds in the major scale do the semitones occur?
11. Define a tetrachord.
12. Which sound of a scale governs all the rest?
13. Give the characteristic names of all the sounds of a scale.

CHAPTER III.

14. Describe a staff, and state how musical sounds are represented upon it.
15. By what means may the range of a staff be extended?
16. What is a clef and its use?
17. Write the two principal clefs, and state their names and uses.
18. How are differences of sound as to pitch named?
19. Upon what line of the treble staff is its clef placed?
20. Upon what line of the bass staff is its clef placed?
21. Give the pitch names of the spaces of the treble staff and of the bass staff.
22. Give the pitch names of the lines of the treble and bass staves.
23. What is the special name given to the sound lying between the treble and bass staves?

24. Write the clef sign that distinguishes other staves than the bass or treble, and state its name.

25. State upon what line of the tenor staff the clef is placed.

26. State which lines of the bass staff are included in the tenor staff.

27. What is the name of the staff that has the C clef on the third line?

28. State which lines of the treble staff are included in the alto staff.

29. Give the name of the staff that has the C clef on the first line, and also of the staff that has the C clef on the second line.

30. Describe the great stave.

31. What is the special name given to the C of the third space of the treble staff?

32. State the position in relation to a staff of C in *alt*, also of tenor C.

CHAPTER IV.

33. How is duration of sound represented?

34. Name and write the forms of the notes in common use.

35. State the relative value that each note bears to the shortest.

36. Describe the form of each of the notes.

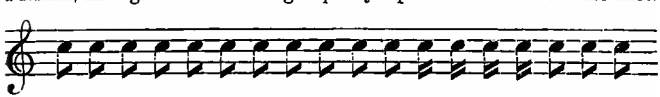
37. What is the note called that is twice the value of the semibreve? Write its sign.

38. What is the name of the note that is half the value of a demi-semiquaver? Write its sign.

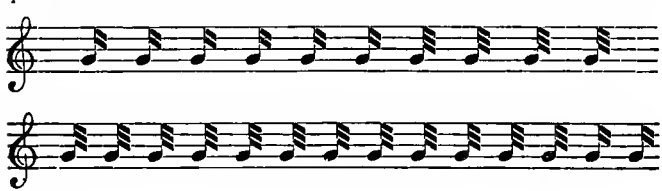
39. Write the value of this note 𝅗𝅥 in quavers, and of this ♩ in semiquavers.

40. What kind of notes can be readily grouped together?

41. Group the following so that each group may represent the value of a minim, and again so that each group may represent the value of a crotchet.



42. Group the following so that each group may represent the value of a crotchet, and again so that each group may represent the value of a quaver.



43. How can the value of a note be increased?

44. What is the effect of adding a dot after a note? What of two dots?

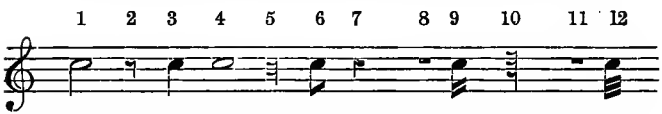
45. Write the value of this 𝅗𝅥 · in quavers, and of this ♩ · in semiquavers.

46. Describe in what other way than by the use of a dot the duration of a single sound can be extended.

47. State how silence is represented.

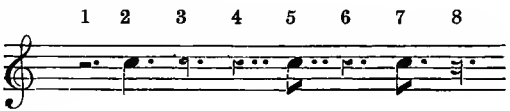
48. Write in order, beginning with the longest, the various signs used for rests, placing them on their proper places on the staff.

49. In the following substitute rests for notes and notes for rests—



50. Can the value of a rest be increased, and if so by what means?

51. In the following substitute dotted notes for the dotted rests and dotted rests for the dotted notes.



CHAPTER V.

52. What is accent?

53. How may a melody be altered without changing the pitch or duration value of any of the sounds?

54. What is the primary element of rhythm in music?

55. What is it that divides music into measures?

56. What is the line across the staff called, and what does it represent? State the use of a double bar.

57. What constitutes a measure?

58. Name the number of parts into which the principal measures are divisible.

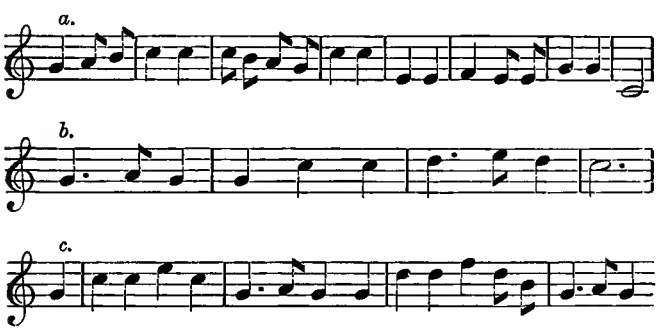
59. What is the unit division of a measure called?

60. What is duple measure, and where is the accent placed?

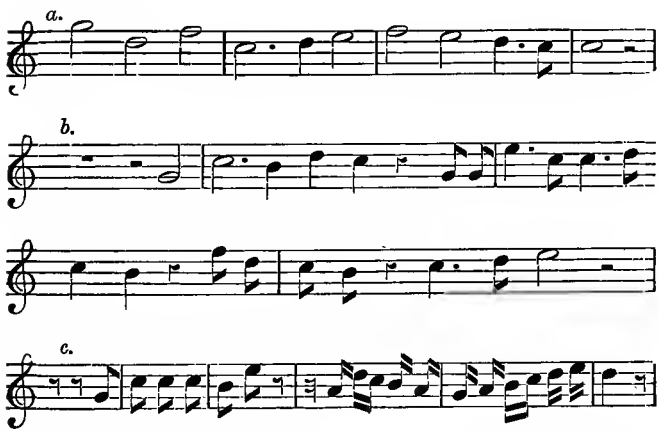
61. What is triple measure, and the order in which the accent occurs?

62. What is quadruple measure? What its accents and the order in which they occur?

63. Write the following with a minim instead of a crotchet for the unit. and say what is the measure of each example—



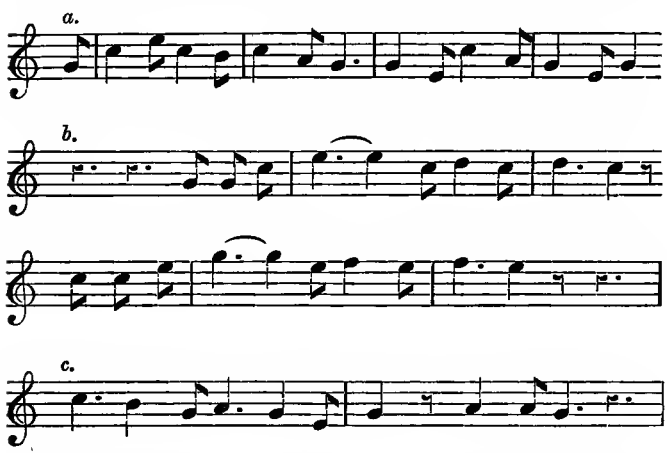
64. Write the following examples, *a* and *b* with a crotchet instead of a minim, and *c* with a crotchet instead of a quaver for the unit. Say what is the measure of each example, and mark thus ∧ each note that has a secondary accent—



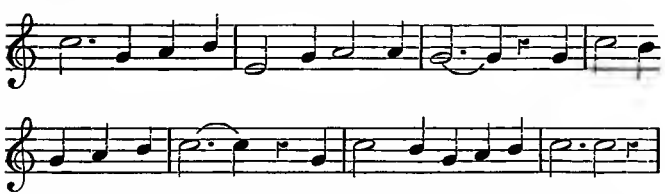
65. Describe a compound measure.

66. What kind of note is used for the undivided pulse of a compound measure?

67. Write the following with a dotted minim instead of a dotted crotchet for the pulse, and say what is the measure of each example—



68. Write the following with a dotted crotchet instead of a dotted minim for the pulse, say what is the measure, and mark thus ∧ each note that has a secondary accent—



69. Describe the method of beating duple time, triple time, and qnadruple time.

CHAPTER VI.

70. Explain what is a time signature.

71. What does the upper figure of a time signature represent? What the lower figure.

72. Give the time signatures of the examples in Exercises 63 and 64.

73. State what kind of measure the following signatures represent—duple, triple, or quadruple—and write two measures of each, $\frac{3}{8}$ $\frac{2}{2}$ $\frac{4}{8}$ $\frac{3}{2}$ $\frac{4}{4}$

74 State by what figure the upper numeral of every signature of compound time can be divided.

75. Give the time signatures of the examples in Exercises 67 and 68.

76. State what kind of measure the following signatures represent, and write two measures of each—$\frac{9}{4}$ $\frac{6}{16}$ $\frac{12}{4}$ $\frac{9}{8}$ $\frac{6}{4}$ $\frac{12}{8}$

77. What kind of measure is expressed by this sign for a signature—C

78. What other signature is used instead of $\frac{2}{2}$? and what is the time called when this signature is used?

79. For what other time than duple time is this sign ¢ occasionally used for a signature?

CHAPTER VII.

80. Name the pitch sounds between which the semitones occur.

81. Give the pitch note from which the order of tones and semitones coincides with that of a major scale, and state what the scale founded on this note is called.

82. How are other semitones produced than those found in the scale just named?

83. How can a sound be raised a semitone? Give the sign used for the purpose, and state its name.

84. How can a sound be lowered a semitone? Give the sign used for the purpose, and state its name.

85. To form a scale of G what pitch note is altered, and how?

86. What parts of the scales of C and G correspond?

87. Taking the upper tetrachord of one scale as the foundation or lower tetrachord of another, what is the note of the original scale that needs altering for the new scale?

88. Write on the bass staff the scales of D, A, and E, in ascending order, with the sharps that are necessary placed against the respective notes.

89. State which scales are founded upon raised pitch names.

90. State which scale has only B unaltered in pitch, and which scale has a sharp against every note of it.

91. State how a key signature is formed.

92. Write on the bass staff the signatures of all the scales having sharps.

93. In a signature of sharps how is the key note most readily recognised?

94. To form a scale of F what pitch note is altered, and how?

95. What parts of the scales of C and F correspond?

96. Taking the lower tetrachord of one scale for the upper tetrachord of another, what is the note of the original scale that needs altering for the new scale?

97. Write in ascending order on the treble staff the scales of E♭ and A♭, and in descending order on the bass staff the scales of B♭ and D♭, with the flats that are necessary placed against the respective notes.

98. State which scale has a flat against every note of it, and which scale has only one note without a flat.

99. Write on the bass staff the signatures of all the scales having flats.

100. In a signature with flats how is the key note most readily recognised?

CHAPTER VIII.

101. Give the pitch note from which the order of tones and semitones coincides with that of the only other kind of diatonic scale than the major scale that is in use, and state what such a scale is called.

102. State between what sounds of a minor scale the semitones naturally occur.

103. State the difference between the first tetrachord of the minor scale and that of the major scale.

104. What alteration is needed to make the upper tetrachord of the minor scale satisfactory?

105. Write the form of the harmonic minor scale of A.

106. State what other sound of a minor scale than the seventh is occasionally altered.

107. Describe the form of the altered diatonic minor scale.

108. State in what circumstances the minor scale is found in its original form.

109. How is a minor scale most readily distinguished from the major?

110. State what is understood by the term relative minor, and upon which note of a major scale does the relative minor begin?

111. State what other relation a minor scale has to a major, and give the term used to express the relation.

112. Which of the two major scales that are related to a minor scale does the signature of a minor scale agree with?

113. Write on the bass staff the signatures of the minor scales of B, D, C, C♯, and B♭.

114. Write on the treble staff the signatures of the minor scales of E♭, E, G, G♯, F, and F♯.

115. Name in order the sharps found in the signature of A♯ minor, and the flats in the signature of A♭ minor.

CHAPTER IX.

116. Give the sign used for raising a semitone a note that is already sharp in the signature, and state its name

117. State the minor scales with sharps that require a double sharp for the leading note.

118. Give the sign used for raising by a semitone a note that is flat in the signature, and state its name.

119. State the minor scales with flats that require a natural for the leading note.

120. State by what means a note is lowered a whole tone from its normal pitch.

121. In what circumstances has a ♮ the effect of a ♭.

122. Write all the signs used for accidentals, and state which of them are used only as such.

123. What is a cautionary accidental?

124. State how a note that has been raised by a double sharp is reduced by a semitone, and how a note that has been lowered by a double flat is increased by a semitone.

125. In what other circumstances than as accidentals are naturals used?

126. What is a chromatic scale?

127. Write the modern or harmonic form of the chromatic scale ascending from G.

128. Write the chromatic scale in D, ascending and descending, according to the arbitrary form.

CHAPTER X.

129. What is meant by an enharmonic change?

130. Shew by examples in what two other ways each of these notes can be represented at the same pitch—

131. State which of the scales with flats have enharmonic counterparts to scales with sharps, naming those that correspond.

132. State in what circumstances the notation of one scale is written for the enharmonic equivalent of another.

CHAPTER XI.

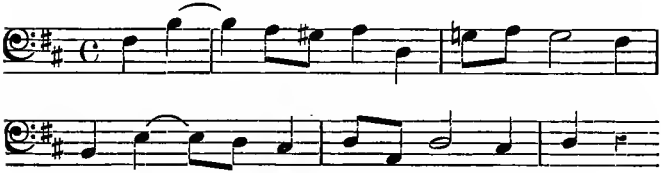
133. For what universal purpose is a semibreve rest used?

134. Show two methods of representing a silence of five measures and a silence of eight measures.

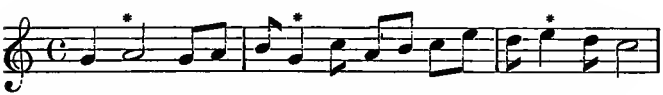
135. Describe a syncopation.

136. Write the following in $\frac{4}{2}$ time, and state which of the notes are syncopated—

137. Write the following in $\frac{6}{8}$ time, and point out the syncopations—



138. Substitute the signs for silence for the notes marked thus *—



139. What is a triplet? Give an example in $\frac{4}{4}$ and one in $\frac{3}{8}$ time.

140. What is the effect when several successive triplets are used in a simple measure?

141. How is a pulse in compound measure sometimes divided.

142. By what means are crotchets or minims grouped for a triplet?

143. What is the general use of a slur?

144. Describe what is meant by staccato, and give the various signs used for the purpose.

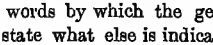
145. What is the meaning of *sostenuto*, and by what signs is it sometimes expressed?

146. Explain this sign 𝄐 and say how it is sometimes qualified.

147. How is the rate of movement usually indicated?

148. Explain the meaning of ♩ = 80 and 𝅗𝅥. = 60; state what kind of measures are referred to and what instrument.

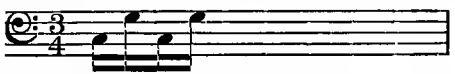
149. Name two or three words by which the general pace of a movement may be conveyed, and state what else is indicated by them than the pace.

150. Explain these signs:  D.C., D.S., 𝄋.

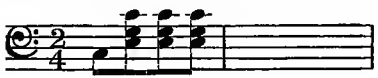
151. What does Fine mean, and in what other way is the same thing expressed?

152. How is the repetition of a short passage expressed?

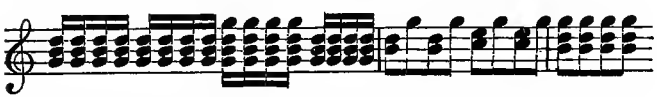
153. Show the abbreviation for the repetition of this figure in all the pulses of the measure—



and for the repetition of this in the next measure—



154. Show how the following passage may be abbreviated—



155. Explain the use of the word *tremolo*.

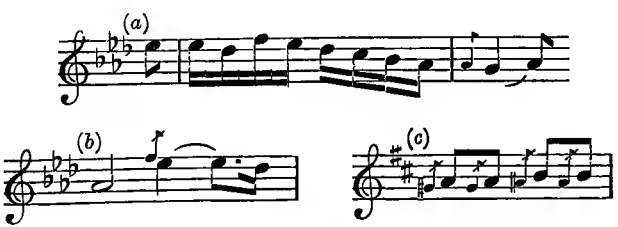
CHAPTER XII.

156. Explain the use of the signs 8*va*, *con* 8*va*, 8*va bassa*, and *loco*.

157. Explain how a combination of sounds are performed in *arpeggio*, and give the sign used for the purpose.

158. What are grace notes?

159. Give the specific names for the small notes in the following examples—



and briefly describe the way in which they are performed.

160. Give the names of these signs, ~ and ≀, and explain their use.

161. Show by examples how accidentals affect a turn.

162. Give the names for these signs, *tr.* and , and show by example their effect.

CHAPTER XIII.

163. Give the meanings of the following words and state which affect intensity, movement, or style—*Pianissimo*, *Moderato*, *Morendo*, *Tempo*, *Crescendo*, *Stringendo*, *Con moto*, *Marcato*, *Animato*.

164. Explain the following signs, *f*,  , *mp*, ∧ *rf*,  , and *dim*.

CHAPTER XIV.

165. Explain what is meant by *Solo*, *Duet*, *Trio*, *Quartet*.

166. Explain the use of Soli, Tutti, Cantoris, and Decani.

167. Name the chief divisions of voices in choral music, and give the ordinary compass of each.

168. What is understood by *mixed voices?* by *equal voices?*

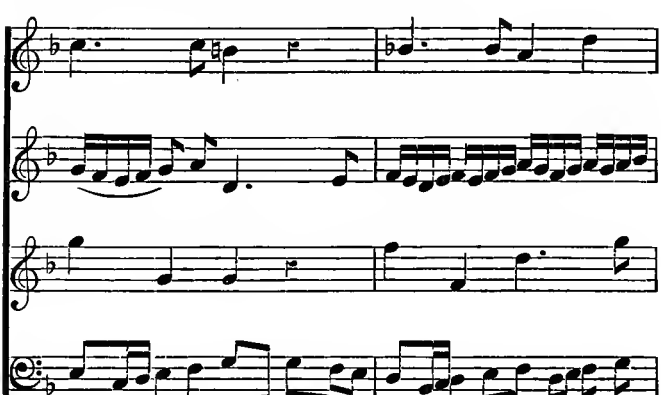
169. What is a score?

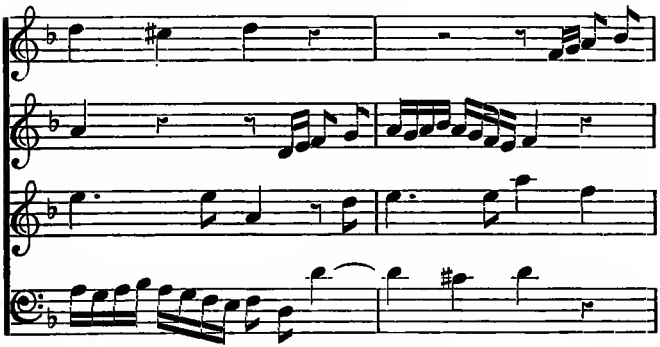
170. Name and briefly describe the different varieties of scores.

171. By what means are staves grouped for a score?

172. Write the example in § 159 in ordinary vocal score and condense the parts again in two staves for an harmonium or organ score to be written under the vocal score.

173. Condense the following into short score—





174. Explain what is meant by transposition.

175. Transpose the example of Fig. 62 a tone higher.

176. Transpose the bass part of Ex. 173 a major 3rd lower.

177. Transpose the example of Fig. 80 into the tenor staff.

178. Transpose the contralto part of the example in Ex. 173 to the alto staff.

179. Transpose the treble part of the example in Fig. 66 a tone lower.

180. Transpose the bass part of the same example a tone lower on the tenor staff.

CHAPTER XV.

181. Define an interval,

182. What does the term degree describe?

183. What other term than degree describes a tone or semitone?

184. How are intervals named?

185. Specify the different intervals found within a scale?

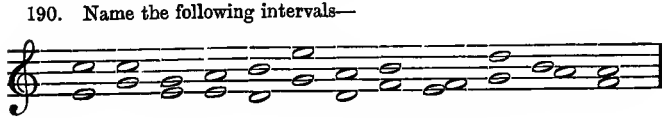
186. What is the change called which some intervals undergo when they are found below the first of the scale instead of above it?

187. State which intervals are termed major and minor.

188. How are the intervals of the 4th and 5th qualified?

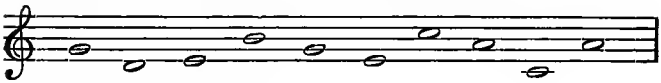
189. What is a tritone?

190. Name the following intervals—

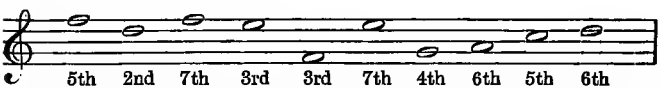


191. Add notes (within the scale) above the following—

3rd 7th 4th 3rd 2nd 5th 4th 3rd 7th 4th



and notes below the following—



5th 2nd 7th 3rd 3rd 7th 4th 6th 5th 6th

to make the intervals named, and specify the quality of each interval as perfect, imperfect, pluperfect, major or minor.

192. What is the inversion of an interval?

193. State the rule by which it may be ascertained what an interval becomes when inverted.

194. State the changes of quality that are produced by the inversion of the different intervals.

195. State the difference between a simple and a compound interval.

196. How may the designation of a compound interval be ascertained from its simple form?

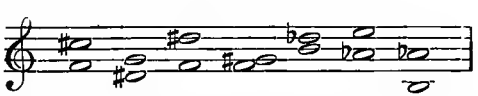
197. Define the terms Diatonic Interval and Chromatic Interval.

198. Explain a chromatic semitone.

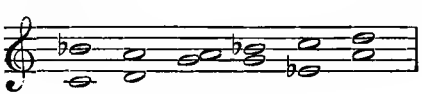
199. Define an augmented interval and a diminished interval.

200. State which intervals may be augmented and which may be diminished.

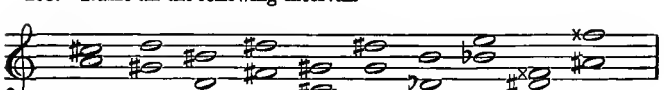
201. Name the following intervals—



202. Convert each of the following into chromatic intervals and specify each in its converted form—

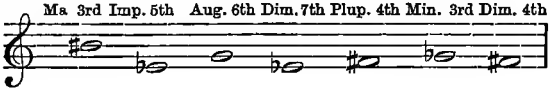


203. Name all the following intervals—



204. Add notes above the following to make the intervals named—

Ma. 3rd Imp. 5th Aug. 6th Dim. 7th Plup. 4th Min. 3rd Dim. 4th



CHAPTER XVI.

205. State which are the consonances, perfect and imperfect.

206. State all the intervals included among dissonances.

207. What is a concord? What a discord?

208. What is the interval upon which modern harmony is founded?

209. Define a chord.

210. State upon which notes of the major scale chords can be formed, which are major and which minor.

211. Write on the bass staff all the chords just mentioned and name them according to the degree of the scale.

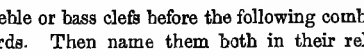
212. State how many chords are found in the minor scale, major and minor, naming them according to the degrees upon which they are raised.

213. State which of the chords in the minor are found in the relative major, and give their names in each scale.

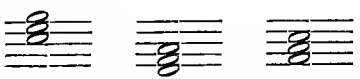
214. State which major chord of the minor scale needs an accidental to express it, and which note of the chord requires the accidental.

215. State the objection to a triad on the leading note, and what other note of the minor scale would furnish a similar triad.

216. Place such signatures for a treble staff before the following chords as will make each of them respectively first a tonic, then a dominant, and then a subdominant chord of a major scale—



217. Place treble or bass clefs before the following combinations to make them minor chords. Then name them both in their relation to a major scale and to its relative minor—



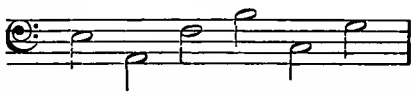
218. Name the constituents of a chord, and say what is understood by a complete chord.

219. Explain the terms constitution and distribution as applied to chords.

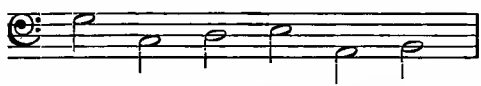
220. Write complete chords in the root position in various distributions on C within the treble staff, and on F and G spread over the bass and treble staves.

221. Explain what is meant by the inversion of a chord; state which constituent stands lowest in the first inversion and which in the second inversion.

222. Write in short score first inversions of chords in various good distributions, using the following bass notes, which are not in any case to be doubled in the constitution of the chord. State under each inversion the pitch name of the root.

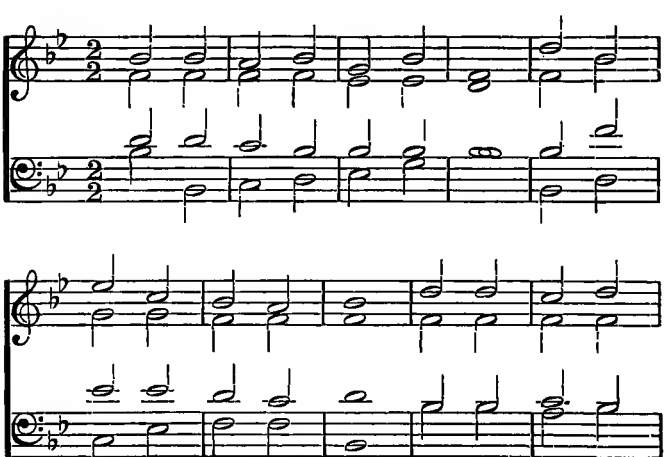


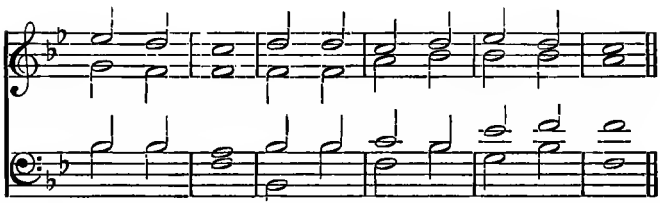
223. Write in short score second inversions of chords, using the following bass notes, and state the pitch names of the roots.



224. What is a figured bass? Give the full figuring of a chord in its root position, in its first inversion, and its second inversion.

225. Figure in the ordinary way the bass of the following example—

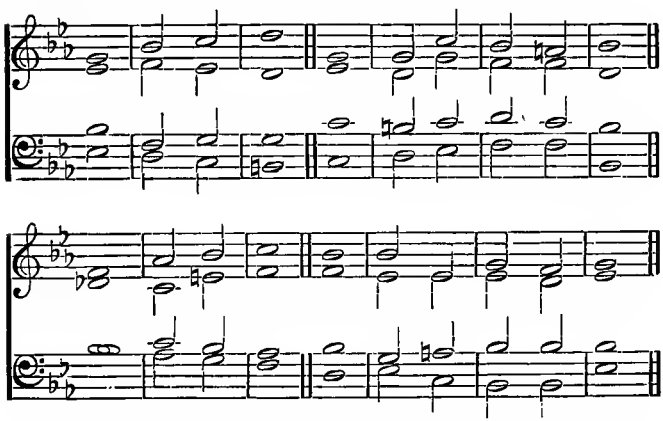


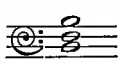


226. State what is the effect of an accidental without a figure placed under a bass note.

227. Give the figurings of the chords with accidentals in the examples of Figs. 118, 123, and 124.

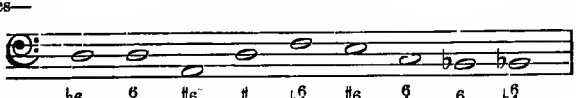
228. Figure in the ordinary way the bass of the following—



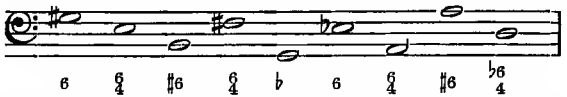
229. State what the following is an example of  and how often such a combination can occur in a minor scale and in a major.

230. State which chords of a scale are used in their second inversions.

231. Write chords in short score according to the following figured basses—



232. Write chords in short score according to the following figured basses—



233. State the several keys in which each of the chords of the six-four position in Ex. 231 could be used.

234. State the keys in which the chords of the six-four in Ex. 232 could be used.

235. Are first inversions or second inversions used with equal freedom to root positions?

236. State what is the element of union between two chords that favours a good succession.

237. Name chords that have an element of union between them.

238. State what intervals may not succeed each other in any two parts.

239. State what succession of chords form a perfect cadence.

240. Write perfect cadences in the keys of D, G, F, B♭.

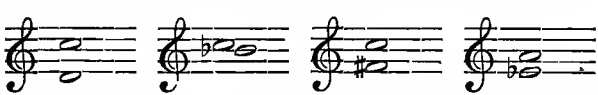
241. What is a half-close? Give examples in the keys of A and E.

242. What is a plagal cadence?

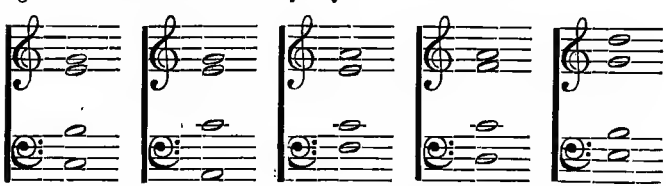
243. Describe the discord of the Dominant Seventh, naming its constituents. Write examples of the discord in keys G, F, and A.

244. Name all the dissonances found in the complete form of the discord

245. Resolve these dissonances—



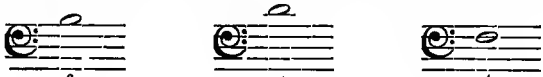
246. Convert the following combinations into discords of the Dominant Seventh by adding the accidentals necessary, and resolve the discords. first in the major and then in the minor. State the key in each case and figure the discords in the ordinary way.



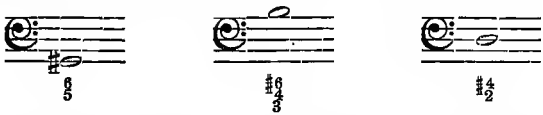
247. State how many inversions there are of the Dominant Seventh.

248. Give the full figurings of the Discord in all its positions.

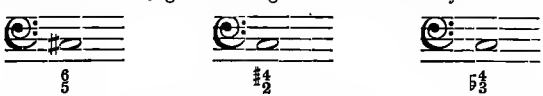
249. Write in short score discords of the Dominant Seventh according to the following figured basses, and resolve each discord in the major.



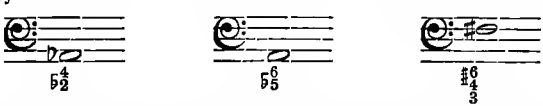
250. Write in short score according to the following figured basses, and resolve each discord in the minor.



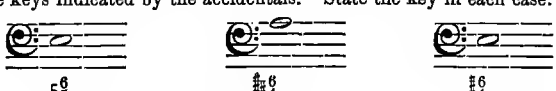
251. Write as in previous exercise, according to the following basses, and resolve each discord in the major of the keys indicated by the accidentals found in the bass or against the figures. State the key in each case.



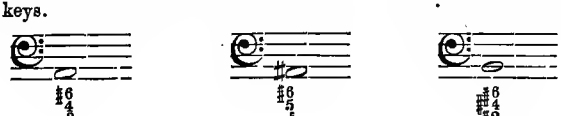
252. Write as in previous exercise, resolve each discord in major, and state keys.



253. Write as in previous exercise, and resolve each discord in the minor of the keys indicated by the accidentals. State the key in each case.



254. Write as in previous exercise, resolve each discord in minor, and state keys.



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